

THE
MEDICAL JOURNAL
OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. I.—5TH YEAR—No. 16.

SYDNEY: SATURDAY, APRIL 20, 1918.

PRICE 6D.

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No. 16.

MYCOSIS FUNGOIDES.*

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A man aged 45, a hairdresser, was sent to me on February 9, 1917, with a skin affection. This was his family history. His father died aged 75, his mother at 82. His father was 54 and his mother 50 years old, when the patient was born. He had eight brothers and seven sisters, all of whom were alive except one sister, who died before he was born, and another who was 60 at death. He was the youngest in this large family.

He had previously consulted me in April, 1905, when "shift boss" in a mill at Broken Hill, concentrating by a very dusty, dry process lead, silver and zinc ores. He complained of severe pains in the back and round the lower part of the chest, which came on after he had been in bed about four hours, and grew so bad that his chest had to be tightly bound round, and he would get up and walk about till they gradually subsided. Careful examination revealed no objective signs of disease anywhere. He was treated for muscular rheumatism, and though he had had his pains for three months, they rapidly disappeared, and did not recur. Soon after this he changed his occupation, because he thought he was "leadied." He had had no palsy, but some colic and much loss of energy. So he opened a shop as hairdresser. At that time his weight was 53 kilograms, then it gradually rose to 78; but owing to the pain of his present illness, and his inability to take food, his weight had rapidly fallen again, until when seen by me in February it was 63.5 kilograms.

In November, 1915, his right upper wisdom tooth began to ache. Previous to this he had lost all his upper molars and bicuspsids, which had been drawn at different times during a period of twenty years, for ordinary caries, and he purposed when this aching wisdom tooth had been removed, to get a partial plate. He bore the pain of the wisdom tooth for about a week, and then had it out. It was found to be quite sound. Eight days afterwards the gums seemed greatly swollen, so he saw the dentist again, who diagnosed local blood poisoning and syringed out the socket for three or four days with an antiseptic lotion. But it grew rather worse than better, and his right eye-tooth began to ache; so he consulted his doctor, who found a swelling on the outer side of the upper jawbone just where the tooth had been taken away, growing towards the cheek, and told him it was a cyst of the jaw. He was anesthetized, his right canine was extracted, and the "cyst" cut away. But in two weeks' time the pain returned, and he could feel a piece of bare bone; this was snipped off by his doctor. As, however, the lump was now as large as previously, he was sent to Adelaide to Dr. Pulleine, who found a tumour of the

upper maxilla growing down through the back of the alveolus, thickening the palate and extending out into the cheek. Transillumination showed the superior maxilla opaque. On January 6, 1916, Dr. A. Campbell Magarey removed the whole of the right superior maxilla, as also some of the infiltrated muscle of the face. The growth was found to fill up the cavity of the antrum and to extend through its outer and back walls, and down through the alveolus. The Government laboratory reported it a round-celled sarcoma. After a month in hospital, and two weeks at the seaside, he returned home.

Just before coming to Adelaide for operation his wife noticed a red spot on the left side of his back, and the nurse spoke of it to the doctor when in hospital. It looked like a ringworm, was painted with tincture of iodine, and seemed to improve. But after returning home other blotches came out about his trunk; and his local doctor gave him some medicine and ointment, and told him it was an after-effect of the operation and would gradually go out of his system. He remained under his care several weeks, but as the condition grew worse he came to town again and saw Dr. Pulleine, and a medical man from India who saw him could not recognize his complaint as any known tropical disease. He was sent to Dr. Harrold for an opinion, who diagnosed "the pre-mycotic stage of *mycosis fungoides*." Another practitioner regarded it as a form of eczema, and treated it with a mixture and ointment. He went back to the Hill, but the disease grew worse, and lumps formed and gradually increased, so after seeing another doctor there he was sent down to Adelaide as a case of recurrent sarcoma, and Dr. Pulleine referred him to me. He went into a private hospital on February 16, 1917.

The eruption, when first seen, may be thus described. The head, neck, face and temples were quite free, except for an area on the occiput, a little to the right of the mid-line, as big as a florin, somewhat infiltrated and weeping, so as to mat his hair. A small spot, about as big as a sixpenny piece, lay just above the sternal end of his clavicle, scarcely raised and red. His operation incision was so accurately adapted, and so perfectly healed as to be very difficult to detect. There was no sign of any recurrence of the growth in his superior maxilla. The right side of the hard palate was lacking, but the rest was quite healthy. There was some redness with superficial excoriation inside the right cheek as far as the angle of the mouth, and the right quarter of the mucous edge of the upper lip was slightly sore. The right half of the tongue was somewhat furred and contrasted with the clean left half. When he took salt or vinegar with his food these smarted, otherwise they caused no discomfort. On his back were very many areas ranging in size from a threepenny piece to 28 cm. in diameter; these were mostly oval, and ran obliquely downward and outward; also on the front of the chest and abdomen, where their

* Read at a meeting of the South Australian Branch of the British Medical Association, on February 28, 1918.

tendency was to be somewhat transverse or oblique, in the line of creasing of the skin. On the arms were very many areas up to 10 cm. across, and when not round, they were rather transverse; the bigger ones were on the posterior and inner parts. About the wrists and hands they were numerous, the webs of his fingers and the creases in his palms and wrists were sore and exuded a crusting serum. He had several large areas on his buttocks and down the backs of his thighs, and on his calves. On the front of his legs, though more numerous, they were much smaller, from 6 mm. to 5 cm. in diameter. About the ankles there were large reddish areas, almost surrounding the lowest part of the leg, and running down below the malleoli, and at the middle of the inner part of the foot to the sole, there were a few dryish eczematous creases. The dorsum of each foot had an area of normal skin, but the front part of the metatarsus and the toes were affected, and these were moist and sore where they touched one another. On his back some of the light-brown patches were seen to have bright red purpuric spots scattered through them, and others had purpuric line, with which, too, the adjacent skin was criss-crossed as though from scratching. But many were about the blade bones and upper parts of the back where the patient could not possibly scratch. They were probably due to pressure upon the folds and seams and irregularities of his pyjama jacket and singlet, and indicated some definite delicacy in the vessels of the skin. His penis looked as though it were eczematous and desquamating, the prepuce was swollen and somewhat indurated, with a phymosis quite preventing retraction; the scrotum was normal.

The eruption was very polymorphous, and presented such appearances as the following:—

(1) Areas not perceptibly raised, of a very light reddish brown or light brick-red tint or as though painted over with weak tincture of iodine, some with well-defined margins, others gradually shading off into the normal tint of the skin; their surface quite smooth or slightly furfuraceous, ranging in size from a florin to 28 cm. in diameter. This large area had a central space, 7 cm. by 6 cm., of healthy looking skin, where complete resolution was said to have taken place.

(2) Spots slightly raised in different degrees, from the size of a threepenny piece to a crown piece, of a more vivid, darker and redder tint, round when small, often becoming oval when larger; the surface smooth or desquamating, or granulated, or quadrilobed, and branny or covered with rather thick dead-white scales.

(3) Areas, up to 10 cm. in diameter, with an accurately circular outline (sometimes crescentically indented); within this was a light brown border 6 mm. to 12 mm. wide, with an inner margin shading off into the paler tint of the general area. Sometimes at a short distance within the circumference was an erect lamina of cuticle all round, outside which the skin was smooth and within which it was branny. In some within this bordering ring was a circular band where the cuticle had been removed, leaving a moist

raw ring, sometimes covered with a serous crust; and within this the central part might be raised, reddened and scaly.

(4) Areas up to 6.3 cm. in diameter (one on the dorsal surface of the middle of the left forearm), not raised, of a light purplish tint, the relics of a tumour (according to the patient) once as high as those on his wrist.

(5) Stretches of skin (as on the lower part of the abdomen and backs of the thighs), up to 76 sq. cm., slightly raised, devoid of cuticle, red and raw and moist, or covered with a thin and fragile crust, which cracked and oozed out a yellowish serum, drying into linear scabs.

(6) Tumours of different sizes and heights. When well grown they were soft, not elastic and not boggy, generally covered with a cracking cuticle, sometimes moist or weeping and not tender, sometimes with the whole thickness of the skin ulcerated off, leaving a rather smooth surface, glazed, lobed, not very moist, but extremely sensitive to touch and pressure at certain parts. It was quite difficult to distinguish between raised patches and tumours, for these occurred of all degrees of elevation, and were manifestly only stages in the same process. Obvious tumours were found in front of the lower end of the left radius and over the carpus; one circular 3.75 cm., the other oval 3.75 cm. by 2.5 cm. A smaller lump was situated on the back of the thumb. In front of the right wrist towards the outer part was another, 3.75 cm. by 3 cm., and 12 mm. high. The largest, "which began to form about three months ago," was on the inner side of the left foot over the first metatarsal bone, and formed a mass about 7.5 cm. long by 6.25 cm. broad, slightly constricted at the base. The skin was greatly thickened, and formed an encircling collar, which also bordered the surface of the growth for about 6 mm., leaving the rest as a glazed red papillated area, oozing a small quantity of serum, and very tender.

The lymphatic glands were enlarged; the left femoral very definitely, the left inguinal less, the right inguinal only slightly, the right femoral not at all; the axillary could scarcely be said to be abnormal. In none of them was the size suggestive of new growth, but rather of inflammatory enlargement, and the largest, the left femoral, were distinctly tender, the group corresponding with the ulcerated tumour on the foot.

He had had almost no pruritus throughout. His chief discomfort, and that not very great, was a smarting of the raw surfaces on sweating.

His subsequent history was as follows. On February 20 his blood was examined at the Government Laboratory by Mr. L. B. Bull, whose report will be given and discussed later on.

He was in hospital for eight months. At first his condition was tolerable, he could eat well, sleep fairly, sit up in his chair, drive out in a motor car, go to the consulting room for his X-ray treatment, and for four weeks his temperature was normal. He had some burning of his skin, which often kept him awake, and pain in his foot where he had the growth

which hindered his getting about. But after this he had attacks of feverishness of varying duration, and elevation. Sometimes his skin would be easier for a week or two, and it would seem as though he were improving, then he would get an aggravation of his condition in some part of his body; and though this would subside again, it would not become as well as before, and after an interval some other area would light up; and so he gradually came to have less and less healthy skin, and the involved parts were more severely affected, until at last there was scarcely any uninvolved skin to be found except that of his ears, of the lower half of his nose and upper lip, and his hairy scalp; a larger area of his total skin surface was without than with cuticular covering.

Though before entering hospital he had very little itching, this came on and increased, and at times was very troublesome, but was never so distressing as the burning. It seemed to be associated chiefly with the drying up and scabbing over of the weeping areas, or with the branny desquamation of areas which had been reddened but had not wept. On the contrary, the burning appeared to attend inflammation of the skin, which would sometimes swell up over a whole limb as the arm, becoming red and oedematous, or would have reddened swollen circular patches. When this inflammation resolved, the burning would lessen, whether the inflamed areas simply subsided or became weeping patches. In the latter event, the places denuded of their epithelium became sore and tender. Very often some large areas, such as that described over the abdomen, would get inflamed, and when the inflammation had subsided there would be found over the old reddened, and thinly epithelialized surface elevated lenticular firm patches from 2 to 4 centimetres in diameter, and these would slowly become depressed to their previous level or begin to weep.

His face kept quite free from all eruption until May 9, when the skin and palpebral conjunctiva of his right lower eyelid became red, and later excoriated and moist. Shortly afterwards a spot of an iodine tint came on his right frontal eminence with a diffused margin. In less than a month a second spot came on the forehead, the first having considerably enlarged, but with unbroken skin. By June 9 the centre of the first frontal spot had become moist over an area the size of a shirt button. By July 27 each of the patches on the right frontal eminence had a central raw surface tending to scab, and there was a tinted spot coming on the left frontal eminence. The cheeks later became reddened, until his whole face except the nose and upper lip were involved, and roughened with tiny erect scales of epidermis.

Occasionally, though seldom, he would have large vesicles form, as on the palm of his hand or under his toes, resembling pemphigus blisters; these bursting and shedding their epidermis would leave raw areas which would swell up into somewhat tumorous masses.

On February 24 he was put under ether, and the large mass on his foot was cut away. It bled very

little, only one spouting vessel in the base of the centre of the mass had to be compressed with an artery forceps. The whole depth of the growth was not taken away. The growth looked on section like subcutaneous granular fatty tissue with the fat replaced by new growth between the fibrous trabeculae. It was hardened in 10% formalin solution and Mr. Bull cut sections of it on February 26 and stained them, and found the histological appearance to be identical with that of the growth from the superior maxillary bone removed by Dr. Pulleine, and of which the microscopic section had been preserved. The operation area dressed with zinc ointment, gradually healed with a firm scar, until one could not recognize any swelling, and the foot was quite comfortable to walk on. It seemed to be completely cured by its removal. But on July 22 an oedematous looking lump about the size of a shilling piece was seen near the inner part of the scar of operation; it was soft, and in a day or two it extended round the margin of the scar and began to ulcerate. This spread persistently, so that before death it was much larger than before removal. By June 18 all the other tumorous lumps on the wrists and hands had subsided, only one being slightly thicker than the normal skin. A blackish round stain remained where one lump had disappeared. On July 19 a lump began to form on the back of the left thumb; by October 8 it had formed a mass as large as a hen's egg, and though the skin was unbroken was discharging serum. In less than a month this had become as large as a turkey's egg, and extended round the front of the wrist, the cuticle was absent from the central part, exposing the very large papillae, and round this was an edge of the thickened soft cuticular layer. A very good opportunity was afforded of watching a growth from its inception. Over the edge of the left *latissimus dorsi* at the back of the axilla, when he first consulted me, was a round area as big as a sixpenny piece, pinkish brown, scarcely raised and smooth. It enlarged and became oval, and obliquely transverse, and its surface somewhat granulated and covered with a creamy white dry scaly epidermis. As its area enlarged so it became more prominent, until it was about 6.25 cm. by 5 cm., and 18 mm. high. Its surface began to ooze serum and soften, its epidermis was shed and the prominent papillae became very conspicuous, until it assumed the appearance of a rather soft malignant looking growth with a granulated ulcerated depression over the greater part of its area. The process took about eight months. There was never the slightest indication of any recurrence of the infiltrating growth of his superior maxilla, either in the bones or in the soft parts around.

Temperature.—His temperature during the first three weeks was normal, then for a month pyrexial, rising through four days to 38.2° C. and reaching a maximum of 39.3°; mostly it was below 37.75°, but on four occasions 38.5°, 38.2°, 38.2° and 38.1°. During the next three weeks it rose above 37.2°, but three times, and then only to 37.5°. For four weeks after this it was normal, then for two weeks as high

as 37.2°, for ten days between 37.2° and 37.75°, for three weeks practically normal, for three weeks more between 37.2° and 37.75°, for a further three weeks not above 37.2°, for one week above 37.2°, once 37.75° and once 38.2°, and then more or less pyrexial, on some occasions every week until death. The third week before his end it was not above 37.2°, the second week it was between 37.2° and 37.75°, and in the week before he died it mounted gradually during five days from 37.2° to 38.9°, and in the last two days had maxima of 38.5° and 38.4°. His raised temperatures seemed to be associated with exacerbations in the inflammation of his skin, especially with acute vesiculation, and formation of red discharging areas, and enlargement of glands.

Shivering was of frequent occurrence. The first attack came quite early, on March 2nd, was attended by pyrexia, 38.2°, and associated with marked tenderness in his left femoral glands. The next occurred on March 15th, and lasted more than half an hour with pyrexia of 38.1°. This came the day after the following note: "the skin has been very irritable and many of the areas are redder than they were and are discharging." During the night of June 7 he had a shiver, though his temperature in the evening was only 36°. He would sometimes have two shivers within six hours of each other, as on June 10. These rigors, varying greatly in frequency, duration and intensity, were more common towards the latter part of his disease, and were generally associated either with a marked elevation of his temperature, an inflammatory condition of his lymphatic glands, or extra discharge from his raw weeping areas. They were a great distress to him, and sometimes produced a sort of collapse, in which he once became unconscious for a short time.

Throughout the whole course of his disease he had no symptoms or objective signs of visceral disease of the lungs, heart, liver, spleen, kidneys, brain or cord. His urine was free from albumin to the last. His bowels were kept regular, according to his usual custom before admission to hospital, by a daily dose of Epsom salts. His appetite was good and he suffered from no dyspepsia. Towards the end it gradually declined and he felt too ill to eat. He died from asthenia, due to pyrexia, and pain and inability to sleep (from itching and burning of his skin), and to the amount of discharge from his raw or ulcerated surfaces. He was finally a pitiable and even loathsome sight, and could not bear to look at his own ulcerated growths. His morning and evening dressings each took his nurse a couple of hours, and he could neither sit nor stand nor lie in ease, for always some denuded places were under pressure. He died utterly worn out and longing for his release, and was conscious nearly to the last in spite of large doses of morphine.

His treatment consisted in the administration of *liq. arsenicalis* for rather more than eight weeks, then tabloids of thyroid extract 0.324 once a day, then twice, then three times a day; tabloids of suprarenal gland substance 0.324, three times, four times and five times a day; X-ray applications over

different areas at different times; and towards the end hypodermic injections of morphine, which eventually rose to 0.141 gramme of morphine hydrochlorate in divided doses. It was impossible to recognize definite and permanent beneficial effects from any one of the methods of treatment employed. The disease progressed in an undulatory manner, now subsiding somewhat, then becoming more aggravated, to resolve in less degree, and then increase again with a more intense exacerbation, the variations showing no proved relation to the treatment he was undergoing at the time.

Diagnosis. There can be no question as to the diagnosis of the case. The polymorphic character of the skin eruption, light reddish brown maculations, red erythrodermic patches, desquamating areas, resolving hyperæmias, infiltrated elevations, granulated surfaces, weeping, scaling or crusted tops, definite tumour masses, with unbroken skin or oozing serum, or with papillation or ulceration, and sometimes complete resolution. Its two years duration is quite usual. One circumstance which, when first the case was seen, might have been urged against the diagnosis was the entire absence of itching. But though this symptom is usual and in some cases very marked, even for years before any definite skin lesion is found, yet it has sometimes been quite mild, and in rare cases absent, for the histories of some well-marked examples of the disease contain no mention of pruritus. But in this instance, though 15 months elapsed before itching was noticed, it was severe enough soon after he came under observation. The histological structure of the cutaneous tumours sufficiently corresponded with that of typical cases.

If one looked only at small areas, it was possible to find fairly good counterfeits of quite a number of diverse skin complaints, such as patches of slightly pigmented dry desquamating eczema, weeping *eczema madidans*, *tinea circinata*, *erythema iris*, *erythema nodosum*, *lichen planus*, *psoriasis*, *purpura*, *dermatitis exfoliativa*, and *pemphigus*. And yet even in these isolated patches there was a want of resemblance to the typical diseases simulated which would arouse suspicion, whereas the impossible association of so many different dermatoses in the same patient could not but suggest some polymorphous complaint of which *mycosis fungoides* alone provides the solution.

One special point of interest in this case is the occurrence of the maxillary growth, as the first incident in the course of the disease. When removed it was regarded as the sole and complete complaint, and though at the time of its extirpation there was one small spot of eruption on the patient's back, this was regarded as trivial, and as quite independent of the neoplasm in the jaw.

The question arises, "What was the nature of the maxillary growth?" Its clinical history was that of a sarcoma; it invaded the alveolus of the jaw, caused toothache, continued to grow after extraction of the tooth, extended to the muscular tissue of the masseter or face, thickened the palate, and when removed, was found to fill the antrum, and resemble a sarcoma. Histologically it was reported to be a

round-celled sarcoma. But the histologist recognized a difference between its structure and that of typical sarcomata; the cells were not quite the same as those found in malignant disease. Moreover, when sections from the tumour on the foot were compared with the preserved section from that in the jaw, they were found to be indistinguishable. As the tumour on the foot was without question a growth in a typical case of *mycosis fungoides*, the tumour in the jaw was unquestionably *mycosis fungoides* too. And though in this disease no case is recorded to my knowledge of a mycosis tumour in the jaw, either as a primary, or a metastatic neoplasm, this maxillary growth may be confidently labelled *mycosis fungoides*. We have no diffidence in affirming identity of nature; whatever we call the maxillary growth, we must call the cutaneous growths; they were one and the same thing. If the maxillary growth was a true sarcoma, so were the growths in the skin. If that was a granulomatous neoplasm, so were these. That was at one end of the complaint, and these were at the other end. If these were *mycosis fungoides*, so was that.

What relationship existed between the maxillary growth and the cutaneous eruption?

In point of time they partially overlapped each other. Just before the maxillary tumour was removed a spot was noticed on the patient's back, and while in hospital after removal it was treated with tincture of iodine because it looked like a ringworm patch. But the overlapping was only partial. The maxillary growth must have existed several months before the first spot appeared in the skin, for the tooth began to ache two months previously, and this pain evidenced considerable development. The maxillary growth was therefore primary in point of time, whatever may have been its causal relationship. This circumstance makes the case unique. No instance, so far as I know, is recorded of *mycosis fungoides* beginning with a growth in connexion with a bone.

The maxillary growth and the cutaneous disease cannot be regarded as merely coincident, and otherwise unrelated. Strange coincidences may occur, even in pathology, but before mere coincidence can be allowed, natural relation must be disproved. Here mere coincidence is disproved by identity in structure of the maxillary and cutaneous tumours. Had one been of one nature, and the others of a nature altogether different, there might have been some ground for suggesting mere coincidence, just as a mammary cancer might be coincident with an attack of *zona*, or of *pityriasis rosea*. But when the microscopical characters of a section from the growth in the jaw are indistinguishable from those in the foot, and the disease of the jaw is continuous as an event with the cutaneous affection, of which the tumour in the foot is a manifest later development, the two must be regarded as having some causal connexion with each other.

Now what was this causal connexion? Did the skin affection arise from the tumour in the jaw? The reverse was certainly not the case; the neoplasm in the jaw did not arise from the skin disease, for that

was existent and advanced before the first spot of eruption was seen. The later cutaneous growths certainly arose from the eruption and were manifestations of the same complaint, just as were the weeping or indurated or desquamating areas. When a patient has a melanotic sarcoma in some definite locality, and it is removed by surgical operation, and is immediately or more remotely followed by buttons of neoplasm in the skin, which on histological examination prove to have the same structure as the primary sarcoma, we have no diffidence in affirming the origin of the cutaneous sarcomatosis from the localized sarcoma; and if local discolourations of the skin had been present before operation for removal of the primary new growth, and had later developed into melanotic lumps, we should still not hesitate to attribute them to the localized sarcoma. Would we be justified in regarding the maxillary growth as the cause of the cutaneous affection?

It might be objected, "As the maxillary growth is so unlike the earlier manifestations of the skin trouble, how can it be the cause of them? and how can they be the same?" But it is not more unlike them than they are unlike the latter tumours of the skin, and yet these tumours and the cutaneous maculations are allowed to be the same. If such tumours can develop from the maculations, why should not the maculations develop from a tumour. That the difference is in appearance rather than in nature, is shown by the observation of Bunch (*Proc. Roy. Soc. Med.*, 1910, Vol. III., Clinical Section, page 6): "Sections of apparently healthy skin taken at some distance from the infiltrated areas also showed these changes, though in a less marked degree," that is, the changes found in the cutaneous tumours. As therefore the essential departure from the normal in the discoloured and slightly infiltrated areas is identical with that in the tumours, there is no reason why, simply because of difference of appearance, the discoloured and infiltrated areas should not arise as secondary manifestations of a primary growth like that in the maxilla. In the present case, if the time relation signifies anything as to causal connexion, the skin disease was secondary and due to the maxillary disease. Of course one can conceive how, at the back of all the phenomena, there might be some ultimate cause which gave rise first to the maxillary growth, and then to the widespread cutaneous developments, and how the former might be only fraternally related to the latter, and not paternally, and this may be the case. But of the first cause we know nothing at the present time.

When seen in February, 1917, the inner surface of the right cheek and of the right upper lip on its visible edge were affected, the tooth had been extracted, the alveolar "cyst" removed, and the maxilla excised. Would it be possible that the infective agent in the tumour, if that were the primary cause, might have been absorbed from the injured growth by lymphatics, or gained entry into wounded vessels during tooth extraction, etc., or been swallowed and so gained entry into the system, and thus have infected the general cutaneous tissues?

Is it possible that in some of the cases hitherto recorded, there may have been a primary neoplasm

in some mucous cavity which furnished material for general infection, a growth which was not recognized during life, nor sought or at least found after death?

Can histologists tell us whether there is any special histological resemblance between these cutaneous tumours or infiltrations in *mycosis fungoides*, and tumours which spring specially from mucous membranes, e.g., those lining bony cavities, so as to support a possibility suggested by this case that *mycosis fungoides* is a systemic infection of the skin from sarcoma-like growths which have their origin in mucous membrane?

There is one form of the complaint which has been called *mycosis fungoides à tumeurs d'emblée*, which begins with tumour formation. In the discussion on mycosis in the Dermatological Section of the Royal Society of Medicine, as reported in the *Proceedings of the Royal Society of Medicine, Dermatological Section* (Vol. VII, 1914, Part I.), some speakers proposed that this should be separated as a distinct disease. Sequeira, however, who opened that discussion, seems not to have been favourably impressed with this view, and in his *Diseases of the Skin* (2nd Edition, 1915) gives it as one of the forms of the complaint commencing with cutaneous tumour formation and subsequently manifesting polymorphous eruptions. The present instance supports Sequeira, inasmuch as it began with a tumour (though not of the skin), and then followed eruptions and growths of the skin. It is possible that cases may occur of multiple sarcoma of the skin beginning with a single cutaneous growth, and consisting of such growths alone, without any polymorphous eruptions. These may be quite different, and may show true sarcomatous structure, and have no relation with *mycosis fungoides* and would be properly separated and classed in a different category.

Discussion has arisen as to the sites of election, and the face has been mentioned, especially the temples, as a favourite place, and the legs as being often free. But in this instance the face was affected only at a very late stage, the ears, and nose not at all, while the legs were very early and severely involved. And further, not only were all the limbs attacked but the extremities of the limbs especially, for the wrists, hands and feet were the sites of the largest growths, and the toes were very bad at times with eruptions.

A "herald patch" has been referred to by some authors, a primary spot in the skin, similar to what is often found in *pityriasis rosea*. Here it was on the left side of the back. But one has to remember the existence prior to this, of what one would have to call the "herald growth" in the right maxillary antrum of Highmore.

The total duration of illness from the first sign of toothache in November, 1915, till death, on November 30, 1917, was exactly two years, during all which time he was never free from distress, or objective signs. This stamps it as rather an acute case, for many patients have lived from 5 to 12 years, several for 20 or more, and one for 35 years after the first symptoms.

His father died at 75 years of age and his mother at 82, so that both his parents were long lived. Moreover, his father was 54 years old and his mother 50 when he was born. He was the youngest of a family of fourteen children, only two of whom predeceased him. The above points, viz., longevity of parents, and conception by a mother advanced in years, have been noted and commented upon in some other recorded cases.

Enlargement of glands was noted when first the patient was seen, and was always to be found. But it varied in degree. There was no progressive increase, as in glands affected by a new growth; sometimes one group of glands, such as the left femoral, would become swollen and tender, and after some days would become smaller. At other times another group, such as the right inguinal, would increase. Their enlargement was found to correspond with some exacerbation of the inflammation of skin or raw spots or lumps in the area which they drained, and when this was reduced, they would gradually subside.

The blood picture, taken a few days after the patient was first seen by me, showed a normal number of red blood corpuscles, but 13,000 whites. In four of Sequeira's cases the average was 9,500, but in one of Abraham's there were 13,000, as also in one of Jamieson's, while in Giovanni's case there were as many as 15,400. In my patient there was at the time a large discharging growth on the foot, besides some weeping areas of skin, which might be thought a sufficient explanation of the slight leucocytosis, but as Mr. Bull has pointed out to me, this would cause an increase almost entirely of polymorphs; but since the polymorphs only constitute 41% of the leucocytes in this blood count, there would only be 6,330 polymorphs, which would not be much above the normal. So that the chief increase in the white corpuscles must be in the other elements, and is not fully explained by the suppuration.

PATHOLOGICAL REPORT,

By Lionel B. Bull, D.V.Sc.,

of the Government Laboratory of Bacteriology and Pathology, Adelaide Hospital.

On January 6, 1916, a portion of a tumour removed from the superior maxilla of a man was received for histo-pathological examination from Dr. Pülleine.

Examination of a frozen section stained by aqueous alum-haematoxylin and van Gieson's stain, showed towards one edge a dense fibrous tissue containing several large blood vessels and a group of voluntary muscle fibres. This edge was probably a portion of the base of the tumour. The opposite edge showed necrosis of the tissues, with some attempt at formation of an ordinary granulation tissue, the surface of which was covered with a fibrinous exudation. The mass of the tumour was composed of round cells, held together by a fine but definite fibrous stroma. Another portion of the section showed a few scattered atrophied muscle fibres lying amongst the tumour cells.

At the base of the tumour the fibrous tissue, the muscle bundle, and the walls of the blood vessels showed an extensive reaction on the part of the fibroblasts, which were deeply staining, very irregular in outline, and showed marked pyknosis and karyorrhexis.

The tumour cells were round in shape, the nucleus showing a loose chromatin network with usually a single nucleolus. Little or no cytoplasm could be detected surrounding the nucleus. At times the cells were slightly irregular or slightly oval in shape, but for the most part they were very regular in outline and round.

The tumour was well supplied with thin-walled blood vessels. The walls of the vessels consisted of a single layer of endothelium, the nuclei of the cells being large and normal in appearance. The tumour cells were bound together by a fine fibrous stroma, which penetrated between the individual cells but did not tend to separate them into groups.

Oval or spindle-shaped cells were found scattered throughout the mass, but were always associated with the stroma or the small blood vessels.

Mitotic figures were frequent, particularly where the tumour cells had invaded and destroyed the muscle. There was a very marked reaction on the part of the fibroblasts in some parts of the section. They were usually thin and deeply staining. Where they were most active they caused destruction of the tumour cells, which were seen undergoing karyolysis.

It was found difficult to classify the new growth. The histological picture presented many unusual and interesting features. The tumour cells were of unusual type. They were larger and less deeply staining than lymphocytes or the cells of a small round-celled sarcoma. They were smaller and more regular in outline and size than the cells of a large round-celled sarcoma. They resembled most of all a lymphoblast, but the tumour did not present the usual appearances of a lympho-sarcoma. The cells were more regular in size and shape than is at all usual in malignant new growths. The blood vessels, although thin-walled, were regular and the walls appeared to be perfect. The tendency of the fibroblasts to invade between the tumour cells and cause their destruction was a striking feature and one not usually encountered in malignant new growths.

The tumour presented many of the usual characters of a malignant new growth in that the tumour cells were embryonic in type, showed abnormal activity, and invaded and caused destruction of normal tissues.

The tumour cell was too embryonic in type to allow of its origin being definitely determined, but one judged that it originated from some mesoblastic cell. The tumour was, therefore, regarded as a round cell sarcoma of unusual type, probably a lympho-sarcoma. Considerable doubt was felt as to the correctness of the diagnosis, for it was not possible to explain the occurrence of a lympho-sarcoma in such a situation.

On the 20th February, 1917, Dr. Verec brought the patient to the laboratory. He was showing tumours in

the skin in various situations. Material was collected from a large tumour on the foot and submitted to cultural and microscopical examination.

No micro-organisms appeared on the tubes of culture media inoculated, nor could any be demonstrated microscopically in stained preparations or by dark ground illumination.

The blood was examined and found to present the following picture:—

Hæmoglobin	97%
Red cells	5,400,000 per c.mm.
White cells	13,000 per c.mm.

Film.—The red cells were normal in appearance. A differential count of white cells gave the following result:—

Neutrophile polymorphonuclear cells	41%
Lymphocytes	49%
Large mononuclear cells	0.5%
Eosinophile cells	7.5%
Basophile cells	1%
Transitional cells	1%

There was, therefore, a lymphocytosis and a slight increase in eosinophile cells.

A few days later Dr. Verec removed a large portion of the tumour of the foot and it was submitted for histological examination.

The epidermis was seen to be very hypertrophic, processes dipping deeply into the tumour mass. These processes showed invasion by tumour cells, which had caused destruction and sometimes complete disappearance of the epithelial cells. Tumour cells had also invaded the *stratum corneum* and in parts the epidermis had been completely destroyed.

The histological picture was, in the main, similar to that of the tumour from the superior maxilla. There was, however, no excessive activity of the fibroblasts, nor did the tumour cells tend to show any signs of degeneration. The tumour cells were of the same type as seen previously, but at times were smaller and deeper staining, resembling more closely a normal lymphocyte.

Mitotic figures were frequent. The tumour mass was well supplied with thin-walled blood vessels. The tumour cells invaded deeply into the subcutaneous tissues, but as the tumour was not completely removed it was impossible to determine the limits of invasion.

Some time later two other specimens were received. One was portion of a tumour and the other portion of a plaque, both of which had been removed *post mortem*.

The histological picture was the same in both specimens and varied only in one respect from that already described. The tumour cells more often tended to undergo degenerative changes than in the case of the previous specimens examined.

This degenerative change was in the nature of a karyorrhexis, and gave the cells a crenated appearance. That this was not due to a *post mortem* change was evident, for it occurred only in certain areas.

Discussion.—A diagnosis of *mycosis fungoides* was not made on the section of the tumour from the jaw. Without the aid of the clinical evidence it is prob-

able that a diagnosis of *mycosis fungoides* would not have been made on the later specimens.

Apparently there has been no case recorded where the primary lesion occurred other than in the skin. Although one may speak of the tumour of the jaw as being primary, in that it was the first manifestation of the disease, the term cannot be used in the same sense as it is used with regard to malignant new growths.

There still exists considerable difference of opinion as to whether the lesions of *mycosis fungoides* should be regarded as granulomata or neoplasms (autonomous tumours). Apparently the histological picture varies somewhat in different cases, and it is on account of this variation that the difference of opinion has existed and still exists. It would appear that the histological picture of the early lesions differs somewhat from that of the tumours or later lesions. Unfortunately no opportunity occurred of examining an early skin lesion from the case under review.

Many of the earlier writers believed that the condition was a sarcoma, but later writers hold more to the opinion that it is really a granuloma. The lesions are said to be formed of cells of many varieties. Some of the cells have large oval nuclei, with faintly staining cell plasma drawn out into fine threads. There are smaller cells resembling the first structurally called "daughter cells," or "characteristic cells." Then there are cells with a dense nuclear reticulum and a deeply staining cytoplasm. Giant cells are also said to occur. There are other cells present indistinguishable from lymphocytes. Mast cells are infrequent and plasma cells rare.

In the tumour stage the lesions are said to consist of large oval cells containing a granular protoplasm, numerous small cells slightly larger than a leucocyte ("daughter cells," "characteristic cells," or "mycosic cells"), mast cells and plasma cells. Some of the cells are said to show mitotic figures.

The lesions from the case under review did not show this great variety of cells, but there can be no doubt that the case was one of *mycosis fungoides*. A remarkable feature, particularly in the lesion from the jaw, was the lack of variation in the appearance of the cells. It is rare to find in any malignant new growth cells so uniform in appearance.

It would appear that one type of cell, probably closely resembling the "daughter cell" or "characteristic cell" of other writers, had overgrown the other types which may have been present in the earlier skin lesions, but certainly were not present in the earliest lesion which originated in the jaw.

The occurrence of a lymphocytosis is in agreement with previously recorded findings, although there is no constant and characteristic change present in the blood.

As explained above, the histological picture resembled that of the lympho-sarcoma, but differed in certain respects from those which are found originating in pre-existing lymphoid tissue.

After a consideration of the clinical evidence, the histological appearances of the lesions of the case under review, and others reported in literature, the following opinion has been reached.

The lesions of *mycosis fungoides* represent neither a granuloma nor a malignant new growth in the sense that these terms are used by pathologists at present. The pathological change may be regarded as forming a link between granulomata and neoplasms. The nature of the change suggests that the lesions are due to the elaboration, collection, or fixing of some toxin in the skin and, in the case under review, also in the mucous membrane of the antrum. It is conceivable that the toxin may be either elaborated by some virus or due to some metabolic disturbance. Whatever the origin of the toxin or irritant it appears to become fixed in the corium, where, at first, it causes a multiplication of the fixed cells of the tissues and attracts a certain variety of wandering cells, mainly of the lymphocyte variety, to the spot. The toxin or irritant continues to act and cause a continued and increased multiplication of the cells. The cells under this excessive stimulation take on a very active growth, become embryonic in character, and invade and destroy normal tissues. In this way they behave like cells of a malignant new growth. They differ from cells of a malignant new growth in not forming true metastatic deposits and in being subject to characteristic degenerative changes. Although malignant new growths are very subject to degenerative changes, the changes are of a different type to those seen in *mycosis fungoides*.

In the more rapid forms of growth the type of cell which predominates, is distinctly that of the lymphocyte group. As mature lymphocytes are supposed to be incapable of reproducing themselves, we have to believe that under certain conditions they are capable of doing so, or that the lymphocyte attracted to the area is of an embryonic type and capable of reproduction.

It is conceivable that a further increase in the degree of stimulation, a slightly increased vitality of the cell, might result in the production of a malignant new growth.

The lesion differs from a granuloma in that often one cell predominates, is embryonic in character and multiplies much more rapidly than cells do in the usual inflammatory lesions.

Whatever may be the view held, it must be agreed that the condition is not a neoplasm and that it is in many cases entirely unlike any lesion of purely inflammatory origin.

Reviews.

OPHTHALMOLOGY.

The notice of a text-book by an enemy subject may be thought to need an apology and an explanation. By way of apology we may say that Fuch's "Text-book of Ophthalmology"¹ has been such a time-honoured friend to so many of us, that even three years of war cannot eclipse our old admiration, or blind us to its many excellencies. The preface to the fifth edition affords an explanation. We find that Dr. Duane is translating from the same German edition that formed the basis of the last English edition in 1911, and to a

¹ Text-book of Ophthalmology, by Hofrat Ernst Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the Twelfth German Edition, by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York, Fifth Edition; 1917. Philadelphia and London: J. B. Lippincott Company. Sydney: Angus & Robertson, Limited. Royal 8vo., pp. 1067, with 462 illustrations. Price, 38s.

large extent has written a new work on his own responsibility.

The form of the book is altered, being shorter and thicker and the subject matter from beginning to end is divided into numbered sections which are utilized largely for cross references. In reviewing a standard text-book like the present work, we naturally turn our attention to those conditions in which recent work has been done, and for which newer methods of treatment have been advocated. For instance, in the chapter on glaucoma we find full recognition of Elliot's work, and commend the moderate tone used in reference to the various methods of sclerectomy, the fear of late infection having caused many American surgeons to revert to the old practice of iridectomy.

In the section on "Diseases of the Retina," some recently described forms of retinitis are mentioned, such as *retinitis stellata*, a non-nephritic form clinically like albuminuric retinitis, and *retinitis exudativa*, first described by Coats. On the other hand, it is surprising to see still depicted the old hæmorrhagic retinitis which is now usually regarded as thrombosis of the central vein. There are also described some new forms of retinal degeneration. Several new varieties of conjunctivitis are referred to, such as "squirrel-plague" conjunctivitis and Samoan conjunctivitis. The ætiology of trachoma is more fully discussed, mention being made of Prowazek's inclusion bodies. A fuller account of the significance of these bodies in the pathology of trachoma and other forms of conjunctivitis would have been welcome. The operation of tarsectomy is recognized as good treatment in obstinate cases, but does not seem to be warmly advocated.

The latter part of Chapter XIV., on disturbances of the mobility of the eye, for which the translator takes full responsibility, is an elaborate classification and description of the various heterophorias and squints, with their signs, symptoms and tests tabulated in meticulous detail. While admiring the erudition displayed, we must confess to finding the reading difficult and somewhat dull. There is much to be said in favour of describing concomitant squint and heterophoria under separate headings. In a footnote the translator very aptly suggests that Worth, in his fusion faculty theory, has been led into a *petitio principii*; the reviewer has always held this opinion.

Turning to treatment, tenotomy is still considered to be correct surgery, combined usually with advancement. Tendon folding is also described, but Bishop Harman's name, which is generally associated with the operation in British minds, is not mentioned. In Part IV. we have a concise account of the anomalies of refraction and accommodation. Some new matter is introduced on difficulties of accommodation. The translator rightly thinks that our views on the ætiology of myopia are greatly in need of revision.

Part V., on operations, has been practically re-written and much enlarged. The additions include operations on the lachrymal structures, keratotomy, keratectomy, keratoplasty, the various methods of sclerectomy and Elliot's trephining. More attention is given to extraction of cataract in the capsule, and to other newer procedures. This portion of the book, rather fragmentary in earlier editions, is now entitled to rank as a reliable guide in ophthalmic operations. Further comment on this excellent and well-known text-book is superfluous, and it only remains for the reviewer to express a hope that a British work of equal suitability, fullness and authority will soon take its place in popular favour.

WAR SURGERY OF THE LUNGS.

It can safely be said that there is at present no book written in our own language which so succinctly treats of war wounds of the lungs and pleura as does *Plaies de la Plèvre et du Poumon*, by R. Grégoire and A. Courcoux.¹ The clumsy methods of operating under negative pressure, such as was utilized in Sauerbruch's cabinet, have long since fallen into disuse, and the exaggerated danger of pneumothorax no longer weighs heavily on the operator.

The progress of the war has seen the pendulum swing, as regards treatment, from the self-satisfied pose of masterly inactivity to one of active and beneficent intervention in suit-

able cases. In this book the authors have considered the subject in a systematic manner, and have maintained a middle path between the advocates of extreme measures like Pierre Duval, and those others, followers of Hartmann, whose treatment is more conservative.

It is generally agreed that in serious hæmorrhage from an "open thorax" intervention alone offers the best prospect of saving the patient; but in these cases of "closed thorax" where the condition of the patient suggests a continuation of the intra-thoracic bleeding, there is a sharp difference of opinion as to the proper course to be followed. First of all, there is the difficulty of being sure that the bleeding continues. The displacement of the heart and liver is considered by some sufficient evidence of this; while others rely on the progressive lowering of the blood pressure, as seen in half-hourly records. The authors here suggest another method of determining the point. It is shown that in an aseptic hæmorrhage where the blood has been effused for some hours, this effusion does not clot either within or outside the thorax. Not merely is it non-coagulating, but it is often anti-coagulant, so that when added to ordinary blood, it prevents clotting. The authors therefore suggest that a puncture be made in these doubtful cases of continued hæmorrhage, and that if the blood withdrawn clots in the syringe, this is evidence of continued bleeding.

The question of the early or late removal of foreign bodies is another rock on which surgeons are split. It is admitted that the unpleasant inflammatory and hæmorrhagic sequelæ of retained foreign bodies make it necessary to remove them sooner or later, but Duval seeks to bring the pulmonary lesion into line with lesions elsewhere by an early operation. The authors point out, however, that there is no parallelism between, say, muscular tissue and lung tissue, inasmuch as the latter is in no way as suitable a field for the anaerobe as the former. Further experience has shown that pleuropulmonary septicæmia and gas gangrene are exceedingly rare manifestations. The majority of surgeons will, therefore, agree with the authors in waiting until the general condition of the patient will have improved.

In regard to prognosis reference is made to the persistence of various symptoms. For long afterwards, but is claimed that tuberculosis is not a late sequel to extensive lesions of the lungs or pleura, an opinion that, in spite of the statistics quoted, will not be found to coincide with that of other surgeons.

The book is of such a kind that no one who is interested in war wounds or in surgery can afford to neglect a study of its contents.

Naval and Military.

CASUALTIES.

The 389th list of casualties, which was issued on April 12, 1918, is an unusually heavy one, and contains the names of a considerable number of commissioned officers. Among the latter, under the heading of "wounded—gas—", are Captain Patrick Joseph Francis O'Shea, M.C., and Captain Geoffrey Fenton. It appears that Captain O'Shea is wounded for the second time.

It is our sad duty to express the sympathy of the medical profession with Dr. Antill Pockley and his family on the loss of his youngest son, Lieutenant John Graham Antill Pockley, who was killed in action in France while serving with a combatant corps.

APPOINTMENTS.

The following appointments, etc., have been notified in the *Commonwealth of Australia Gazette*, No. 52, under date of April 11, 1918:—

Army Medical Corps. Medical Officers.

With reference to Executive Minute 67/1918, promulgated in *Commonwealth of Australia Gazette*, No. 15, dated 7th February, 1918, for "Lieutenant-Colonel (temporary) C. T. C. de Crespigny," read "Lieutenant-Colonel (temporary Colonel) C. T. C. de Crespigny"

Major D. D. Cade to command No. 3 Field Ambulance,

¹ *Plaies de la Plèvre et du Poumon*, par R. Grégoire et R. Courcoux. Collection Horizon: Précis de Médecine et de Chirurgie de Guerre; 1917. Paris: Masson et Cie. Crown 8vo., pp. 212, illustrations. Price, 4 francs.

and is granted the temporary rank of Lieutenant-Colonel whilst commanding. 17th December, 1917. Major K. R. de V. Shaw having resigned, his appointment in the Australian Imperial Force is terminated. 28th December, 1917.

To be Major (temporarily)—

Captain (provisional) F. C. Curtis-Elliott, Australian Army Medical Corps. Dated 12th February, 1918.

To be Captains—

Captain H. S. Jacobs. 50th (St. Kilda) Infantry. Dated 1st March, 1918.

Honorary Captain A. C. Wilton, Australian Army Medical Corps Reserve. Dated 23rd February, 1918.

Honorary Captain C. H. Clatworthy, Australian Army Medical Corps Reserve. Dated 18th February, 1918.

Gordon Charles Wesley Holmes and Hamilton Speirs Kirkland. Dated 8th February, 1918.

Arthur Thomas Rowlandson Robinson. Dated 18th February, 1918.

Basil Lloyd Hart. Dated 19th February, 1918.

To be Colonel—

Lieutenant-Colonel W. T. Hayward, C.M.G. 9th January, 1918.

Army Medical Corps.

To be Major—

Captain J. Kennedy, Australian Army Medical Corps. Dated 23rd March, 1918.

To be Captains—

Captain C. F. Paget, Australian Army Medical Corps. Dated 11th March, 1918.

Honorary Captain A. B. McCutcheon, Australian Army Medical Corps Reserve. Dated 12th March, 1918.

Honorary Captain R. M. Allport, Australian Army Medical Corps Reserve. Dated 13th February, 1918.

Honorary Captain S. Cochrane, Australian Army Medical Corps Reserve. Dated 4th March, 1918.

Honorary Captain C. Badham, Australian Army Medical Corps Reserve. Dated 15th February, 1918.

Harold Crawford. Dated 11th March, 1918.

1st Military District.

Australian Army Medical Corps (Permanent Services)—

Quartermaster and Honorary Captain J. W. Blacklock, Australian Army Medical Corps Reserve, being Quartermaster (temporarily), with salary at rate of £250 per annum, inclusive of all allowances except travelling, whilst holding such position. Dated 23rd February, 1918.

Australian Army Medical Corps—

The appointment of Lieutenant-Colonel (temporary) J. E. Dods, D.S.O., M.C., as Principal Medical Officer, being terminated. Dated 7th March, 1918.

Australian Army Medical Corps—

Commander J. A. H. Beresford, Royal Australian Navy, to be Honorary Lieutenant (temporarily) with pay at rate of £200 per annum, inclusive of all allowances except travelling. Dated 1st January, 1918.

Captain (Honorary Lieutenant-Colonel) J. E. Dods, D.S.O., M.C., to be Lieutenant-Colonel (temporarily) whilst employed as President Permanent Medical Referee Board (part-time). Dated 11th March, 1918.

2nd Military District.

Australian Army Medical Corps—

Honorary Captain N. W. Kater being transferred from Australian Army Medical Corps Reserve, and be Adjutant (temporarily), with temporary rank and pay of Major, at rate prescribed by Financial and Allowance Regulation 340, whilst holding this position. Dated 15th January, 1918.

Captain (provisional and temporary) N. M. A. Alexander being Senior Medical Officer, Liverpool

Camp, with temporary rank and pay of Major, at rate prescribed by Financial and Allowance Regulation 340, whilst holding this position. Dated 12th February, 1918.

Major E. S. Stokes being Honorary Lieutenant-Colonel. Dated 11th January, 1918.

Captain (provisional and temporary) F. M. Suckling being transferred to Australian Army Medical Corps Reserve, and be Honorary Captain. Dated 31st January, 1918.

Australian Army Medical Corps Reserve—

Francis John Graham to be Honorary Captain. Dated 1st January, 1918.

Honorary Captain W. B. Dight to be granted temporary rank and pay of Major at rate prescribed by Financial and Allowance Regulation 340, whilst holding position of Radiologist at No. 4 Australian General Hospital. Dated 1st March, 1918.

Australian Army Medical Corps—

Lieutenant-Colonel G. L. Mullins is transferred to Australian Army Medical Corps Reserve. Dated 16th January, 1918.

Captain (provisional) F. E. Wall is transferred to Australian Army Medical Corps Reserve, and to be Honorary Captain. Dated 15th January, 1918.

3rd Military District.

Australian Army Medical Corps Reserve—

Francis John Drake to be Honorary Major. Dated 1st March, 1918.

Ernest Spargo to be Honorary Captain. Dated 6th March, 1918.

Otto Albert Field to be Honorary Captain, Dated 25th November, 1916.

Albert Robert Thorne and Frederick William Green to be Honorary Captains. Dated 15th March, 1918.

Captain (provisional and temporary) T. A. Wright to be transferred from Australian Army Medical Corps and to be Honorary Captain. Dated 15th March, 1918.

4th Military District.

Australian Army Medical Corps Reserve—

Edward Walter Morris, being Honorary Captain. Dated 10th February, 1918.

Australian Army Medical Corps Reserve—

Alexander Matheson Morgan to be Honorary Major. Dated 1st February, 1918.

6th Military District.

Australian Army Medical Corps Reserve—

Gordon James Walker being Honorary Captain. Dated 1st March, 1918.

Australian Army Medical Corps—

Major (temporary) D. H. E. Lines to be granted temporary rank and pay of Lieutenant-Colonel whilst employed as President of Permanent Medical Referee Board (part time). Dated 25th February, 1918.

Appointments Terminated.

The appointments of the undermentioned officers are terminated from dates stated opposite names:—

Colonel A. Sutton, C.M.G.—7th March, 1918.

Major G. W. Baker—20th February, 1918.

Major G. E. Maroll—28th February, 1918.

Major J. A. Murphy—3rd March, 1918.

Captain M. D. Silberberg—1st March, 1918.

Lieutenant-Colonel D. A. Cameron. 20th March, 1918.

Lieutenant-Colonel J. R. Webb. 28th February, 1918.

Lieutenant-Colonel R. MacDonald. 22nd March, 1918.

Captain F. N. Rodda. 13th March, 1918.

Captain J. K. Couch. 14th March, 1918.

Captain R. M. Thomson. 15th March, 1918.

Captain R. B. Leosli. 21st March, 1918.

Captain F. C. Adams. 24th March, 1918.

Captain E. S. Smalpage. 18th February, 1918.

The Medical Journal of Australia.

SATURDAY, APRIL 20, 1918.

The Problem of the Inebriate.

It is vain to attempt to make people sober by legislation. But it would be criminal to leave the statute book devoid of enactments aiming at the control of persons disposed to excessive indulgence in alcoholic beverages and narcotic drugs. That alcohol is a national curse, second in importance to no other deteriorating agency, few will dispute. If we could banish drunkenness and alcoholism, our criminal courts would be seldom in requisition, our prisons would be half empty and our venereal clinics would be largely deserted. If it were not for the dire results of alcoholism, disaster in married life would be a rarity, poverty would be easily overcome, and many of the griefs of life would disappear completely. In spite of these truisms, there is no hope that alcoholism will ever be removed. Preaching and appealing to reason, sentiment or fear have failed and will always fail to make an appreciable difference on intemperance. One man drinks to excess because he seeks solace in forgetting; another drinks to excess because he finds pleasure in the soothing effects of ever-increasing quantities of alcohol; a third man drinks to excess because he is quite incapable of resisting the craving; others, again, drink to excess because they like the taste of alcoholic beverages and have not sufficient self-control to stop before the transition from moderation to excess has been reached. In the last place, the drinking habit is not infrequently acquired as a price paid for "sociability." The prevention of alcoholism is impossible, because the fault lies in the nature of human beings.

While the prospects of making the world either moral or sober are little promising, a considerable amount of suffering and misery may be prevented by the application of well-directed measures of control of those who have too little control over themselves. In a certain number of these cases it is even

possible to cure a craving for alcoholic drinks or a wilful resort to excessive indulgence. In the several States of Australia legislative provision has been made for the safe custody and expert treatment of inebriates. The machinery created for this purpose consists in the power of a Judge or other person in authority to order the detention of an inebriate in an institution for a limited period or to place him under the control of an attendant for a limited period. The Acts recognize two distinct classes of inebriates for whom provision may be made. In the first place, there are those who may apply for an order themselves, or for whom the application may be made by a near relative or partner in business, or by the medical practitioner in attendance. The second class embraces those who are convicted repeatedly for offences committed as a result of drunkenness. The Acts further give the Governor power to establish institutions for the care of inebriates and to issue licenses for privately-owned institutions. These licensed institutions are subject to inspection, and their conduct is to be governed by regulations framed in accordance with the provisions of the Acts. The Acts do not differ materially in the several States. In the New South Wales enactment the inebriate may enter into a recognizance that he will abstain from intoxicating liquor and intoxicating or narcotic drugs for at least twelve months. Similarly, a convicted inebriate may be discharged on the condition that he enters into a recognizance that he will be of good behaviour, that he will abstain from intoxicating liquor, etc., that he will report himself at least once in each three months, and that he will not do or omit anything whereby his recognizance would become forfeited. There is also a provision for the release on license of any person detained in a State institution. The Victorian Act is the simplest and least cumbersome of the Acts. In South Australia there is a separate Act for convicted inebriates. A second Act gives the authorities power to deal with ordinary inebriates under detention when they do not conform with the rules of the establishment wherein they are detained. Under the former Act the Governor may proclaim a gaol or any other place an institution for the reception, detention, control, care and treatment of inebriates. Convicted inebriates are required to

work at some trade or avocation. When a convicted person is declared to be an inebriate, he may be detained "during His Majesty's pleasure." The inebriate may be released on license on similar conditions as those contained in the New South Wales Act. The Queensland Act, which is dated 1896, contains wide provisions. Included in the Act is a clause empowering the Home Secretary to grant a license to a person to keep a retreat. Voluntary patients may be admitted to these retreats. The chief characteristic of the Act in Western Australia is the provision that inebriates convicted under the Act may be imprisoned, but without hard labour. The detention is limited by law to twelve months.

While the Acts differ but little in their general provisions, and are permissive, rather than mandatory, the regulations are more constructive, and amplify the provisions of the main Acts. In New South Wales, Victoria and South Australia the convicted inebriate is dealt with under a system of progressive grades. Good conduct is rewarded by advancement and by dietetic and other privileges, while the inmate is punished by degradation for offences against discipline, idleness or misconduct. There are further special provisions for the earning of money by the manufacture of saleable articles, and the diligent inebriate benefits by this arrangement. In Western Australia, a convicted inebriate can be fined for offences. Other regulations determine the manner in which inebriate institutions of all kinds may be managed, and define the duties of those concerned with the care, control and treatment of these people.

Those who are responsible for the administration of the Acts find that in certain respects they are capable of being made more satisfactory. There is, however, little need at present for modifications of the law, as the advantage taken of the permissive legislation is utterly inadequate to meet the demands of the situation. In Victoria, there is an excellent State institution at Lara, where male inebriates are admitted under the provisions of the Act. The number of persons dealt with in the year is approximately 175. This institution can accommodate more patients than are usually resident in it. An exceedingly valuable institution for female inebriates is owned and managed by the Salvation Army. This is Brightside.

Full use is not made of the accommodation in this institution. The course is seven months, although in the Salvation Army Retreat in England, the course is at least one year, and not infrequently two years. The management of this home is excellent, and the patients are well treated and most skilfully controlled. Even with the relatively short course, the results obtained are good, at times surprisingly good. Though the provision for the control and attempted treatment of inebriates in Victoria is restricted to two by no means large institutions, full use is not made of these facilities. The law gives the inebriate, his near relatives, his business partner, or his medical attendant the privilege of applying for an order to have the inebriate admitted to one of these institutions. That this course offers to the patient the best chance of recovery and to the outside world the best protection against damage through irresponsible acts on the part of a person, temporarily deranged by drink, will not be disputed. Incidentally, it must be remembered that the hospitals for the insane invariably recruit larger numbers from among those who indulge too freely in alcohol. Moreover, between 7,000 and 7,500 persons are convicted for drunkenness during the year in the State. Why are these opportunities neglected? Why is not fuller use made of the most adequate provisions for the control of inebriates in any Australian State? There is no doubt that the patients and their friends have still to be taught of the advantages of a stay in institutions such as Lara and Brightside. This information should be carried to them by medical practitioners. Before the lesson can be taught, medical practitioners need to inform themselves of what is done for the unfortunate patients in these institutions, and they must be induced to recognize that no other plan of treatment and control offers the same prospect of success. With the assistance of the medical profession, the defect in the present position may be remedied.

In New South Wales the Salvation Army have provided accommodation for twenty-five male patients. This is the only private home or retreat for the control, care and treatment of inebriates in the whole State. The Government has done nothing in this direction. The State looks after its convicted in-

ebriates in a satisfactory manner. We would urge, however, that the control of convicted inebriates is at best a poor control, and even if the conditions under which they are cared for has improved out of recognition during the last decade or two, the problem of the inebriate will not find anything approaching a solution, as long as the vast majority of the persons affected are dealt with in penal establishments instead of in medical institutions.

In Queensland the Act is only applied in so far as convicted inebriates are concerned. In South Australia an attempt has been made to deal with inebriates not under detention as a result of conviction for drunkenness. There is an institution at Eden Hills for the control and treatment of fourteen male patients. The resident superintendent is a registered pharmacist, while a medical practitioner acts as visiting medical officer. Convicted inebriates are dealt with in a special portion of the gaols.

In Western Australia male inebriates are treated in a small institution attached to the Claremont Hospital for the Insane and female inebriates at a home at Cottesloe. For convicted male inebriates there is an institution at Whitby, but there is no analogous establishment for females.

It will thus be seen that, while the necessary machinery for the protection and reclamation of inebriates has been set up in the States, the campaign has broken down, owing to sheer inactivity. The State has neglected its duty by not providing sufficient accommodation apart from penal establishments for those who are in need of control and treatment. Only in one State has any real provision been made. The several Governments should realize their responsibilities in this direction and establish homes on a sufficient scale. Notwithstanding the sad fact that inebriety is a disorder which is extremely difficult to cure, it is absolutely necessary to apply curative measures in all cases, to awaken confidence in the institutions for the benefit of sufferers, and to utilize every instrument which will enable those who have charge of inebriates to approach these patients and to obtain a beneficial mental influence over them. The prospects in the individual case may be slender, but

the necessity for making a real effort on behalf of these miserable patients is none the less urgent.

THE RE-EDUCATION OF WAR CRIPPLES.

There are some who scorn to learn anything from their enemies. The mental attitude involved is difficult to understand, since the refusal must react to the disadvantage of the person or nation insisting on it. The dilatory manner in which Australia has dragged on without any policy for the re-education of war cripples until over three and a half years of war have passed, suggests that those responsible for the welfare of the brave, loyal and honourable men who have taken up arms in response to the call from Great Britain, are little inclined to learn from our own kith and kin, from our friends or from our enemies. The opportunity of learning about the methods adopted in Germany for restoring the earning capacity of the incapacitated is not often given us. It is, therefore, significant that Dr. Douglas C. McMurtrie, the Director of the Red Cross Institute for Crippled and Disabled Men in New York, has published an admirable account of the methods adopted at the *Verwundetenschule* at Düsseldorf.¹ He has obtained his information from a detailed report of this institution. There are fifty hospitals in Düsseldorf. The city is the headquarters of an amalgamated society of voluntary relief. The local branch of the Red Cross Society, the Patriotic Women's League and the City Council are represented in this organization. Under its auspices the *Verwundetenschule* has been founded. It began as a relatively small bureau, where courses of general education were given, and has gradually extended until it now embraces a complete series of departments for vocational re-education. Workshops, school buildings and offices were erected for their special purposes. The principle on which the school works is as follows: When necessary, an allowance is paid to the dependants until the cripple is able to earn wages. The disabled soldier received his pension permanently, and his wages may not be lessened because of this fact. The employment committee have to see that war cripples are paid "just what they earn—no more, no less." There is a special vocational guidance committee, whose business it is to encourage the men at a time when they are discouraged, and when their ambitions are at a low ebb. The vocational adviser starts a course of will-training, and experience has shown that this teaching is eminently successful. It is impossible in this place to record the details of the methods adopted in each department, or to explain in full the way in which the war cripples are enabled to secure remunerative employment after they have completed their courses of instruction. An endeavour is made in each case to utilize the previous experience of the man by re-training him to his former vocation. When his disability precludes him from performing the manual work at which he was engaged, it is possible in many cases to expedite his training in such a way that he can leave the workshop to take up the position of foreman,

¹ *Boston Medical and Surgical Journal*, February 7, 1918.

supervisor or master worker. The directors of the school assert that it is wonderful to watch how rapidly an almost helpless man can be made efficient. The workshops have been built by disabled men, and, with the aid of modern machinery, many men with paralysed limbs, or with but one arm or one leg, can be taught to perform manual work which, in the olden days, would have necessitated the full power of all the muscles of the body. Great importance is attached to the development of hitherto undeveloped skill. Decorative art is encouraged, and opens up a fertile field for employment in men who have been unconscious of any gifts in this direction. The most elaborate equipment is provided for training in special technical trades, and, with practice, the crippled men have produced electrical and other appliances of a high order of effectiveness. Where the incapacity is a permanent bar to any form of skilled manual occupation, recourse is made to clerical work. Men are trained to fill positions in the office of their old business firms, and the courses given are thorough and properly planned. The men are taught book-keeping, commercial arithmetic, typewriting and stenography, commercial law, correspondence, card indexing systems, the use of calculating machines, and the English and French languages. Agricultural employment is not neglected, and in these courses full advantages are taken of the modern advances in science. In each department there is evidence of thoughtful attention to details which make for efficiency and thoroughness. Dr. McMurtrie points out that the underlying aim in the vocational training of war cripples is that they shall move up the labour ladder and that they shall not go down.

THE COMPOSITION OF THE BREATH.

The passage of air to and from the lungs has been known to the learned since the first rough anatomical examinations of the mouth, throat and chest. The warmth of the expired air was recognized by naturalists and the cooling of the body by the breath supplies the basis of the respiratory physiology of the Grecian philosophers of the days of the Phillip of Macedon. No conception other than that of altered temperature was employed in explaining the act of breathing for more than a thousand years. To Hook, Croon and Boyle we owe the idea that the air is concerned with the depuration of the blood. Mayow, of Oxford, discovered that one of the constituents of the atmosphere was necessary for combustion, and he held that this same component entered the blood in respiration. In 1757 Black detected carbon dioxide in the exhaled breath. Priestley showed that the change in colour of venous blood on exposure to air was due to the action of oxygen, which he had prepared in a pure state. Lavoisier recognized that animal heat was produced by carbonaceous combustion, and that the oxygen absorbed from the inspired air was excreted in combination with carbon. Lavoisier believed that this union took place in the lungs, but Le Grange suggested that the absorption of oxygen by the blood occurred in the lungs, and that this oxygen combined with carbon during the course of the cir-

culatation and that the carbon dioxide was liberated when the blood returned to the lungs. The conception of intracellular respiration is due to Pflüger. The presence of gases in the blood which could be liberated on exposure of the blood to a vacuum, was known to Boyle, while Priestley identified oxygen in the gas set free. Humphrey Davy obtained both oxygen and carbon dioxide from blood in 1799. To Magnus, Fernet, Ludwig and Helmholtz we owe the accurate measurement of the carbon dioxide, oxygen and nitrogen that are held in solution in the blood.

The gaseous exchange between the air and the blood in the lungs has been studied in many ways. Attempts have been made to ascertain correctly the composition of the gases in the air passages. Haldane, in 1903, put forward the view that the last portions of the expired air contained alveolar air from the pulmonary alveoli, and supported this view by analyses of the middle and last portions of the breath. Much investigation has been performed on the composition of this expired alveolar air. A year ago Miss Ethel Pinkerton showed that the composition of the final 625 c.cm. of the exhaled breath remained constant within the error of the analyses, when the air was expelled within a second from the lungs. Recently Miss Pinkerton has repeated¹ her investigation with analytical methods of higher accuracy. In her early work she could only detect with certainty changes in concentration of carbon dioxide of the order of 2% of the amount in the breath, while in this later study her analytical method was five times as delicate. With the improved method of gaseous analysis she finds that the percentage of carbon dioxide increases continuously in the expired air as it leaves the air passages, though the rate of increase is slow. The percentage of oxygen falls in a corresponding manner. Miss Pinkerton infers that the concentration of carbon dioxide in the air remaining in the lungs is higher than that in the last part of the exhaled breath. It follows that the tension of carbon dioxide in the arterial blood leaving the lungs is greater than that of the expired alveolar air. The difference is not considerable, so that for many purposes the tension of carbon dioxide in the arterial blood can be taken as similar to that of the alveolar air. These conclusions only hold for the body at rest. During work the alveolar expired air differs by a considerable but variable amount from the alveolar air in the lungs. This variation cannot as yet be estimated.

We regret to announce the death of Dr. James Patrick Ryan, which took place in Melbourne on April 8.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending April 6, 1918:—

¹ *Proc. Linn. Soc. New South Wales*, Vol. XLII., p. 868, April, 1918.

	Metropolitan Combined District. Cs. Dths.		Hunter River Combined District. Cs. Dths.		Rest of State. Cs. Dths.		Total. Cs. Dths.	
Enteric Fever ..	14	2	1	1	16	1	31	4
Scarlatina ..	18	0	0	0	18	0	36	0
Diphtheria ..	94	5	10	2	74	2	178	9
*Pul. Tuberculosis	21	7	2	0	0	0	23	7
C'bro-Sp'l Menin.	1	0	0	0	1	1	2	1
Pollomyelitis ..	1	0	0	0	1	0	2	0

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending April 7, 1918:—

	Metro- politan. Cs. Dths.		Rest of State. Cs. Dths.		Total. Cs. Dths.	
Enteric Fever..	2	0	5	0	7	0
Scarlatina ..	19	0	25	0	44	0
Diphtheria ..	41	0	58	0	99	0
Pulmonary Tuberculosis	13	5	9	4	22	9
C'bro-Spinal Meningitis	1	—	0	—	1	—
Pollomyelitis ..	2	—	6	—	8	—

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending April 6, 1918:—

Disease.	No. of Cases.
Enteric Fever..	29
Scarlatina ..	10
Diphtheria ..	60
Pulmonary Tuberculosis	9
Cerebro-Spinal Meningitis	3
Pollomyelitis ..	2
Erysipelas ..	3
Ankylostomiasis	1

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending March 30, 1918:—

	Adelaide. Cs. Dths.		Rest of State. Cs. Dths.		Totals. Cs. Dths.	
Enteric Fever..	0	0	0	1	0	1
Scarlatina ..	0	0	6	0	6	0
Diphtheria ..	2	0	17	2	19	2
Pulmonary Tuberculosis	0	1	10	6	10	7
C'bro-Spinal Meningitis	0	0	1	1	1	1
Erysipelas ..	0	1	2	0	2	1
Morbili ..	2	0	1	0	3	0
Pertussis ..	1	0	1	0	2	0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the fortnight ending March 16, 1918:—

	Metro- politan. Cases.		Rest of State. Cases.		Total. Cases.	
Enteric Fever..	17	—	6	—	23	—
Scarlatina ..	12	—	6	—	18	—
Diphtheria ..	32	—	18	—	50	—
Pulmonary Tuberculosis	11	—	3	—	14	—
Erysipelas ..	1	—	0	—	1	—
Septicæmia ..	1	—	0	—	1	—
Bilharziosis ..	3	—	0	—	3	—
Ophthalmia ..	1	—	0	—	1	—

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the fortnight ending April 6, 1918:—

Disease.	Hobart. Cases.	Lam- cesion. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever..	1	5	26	32
Scarlatina ..	0	1	5	6
Diphtheria ..	5	9	24	38
Pulmonary Tuberculosis	0	2	3	5
Pollomyelitis ..	0	0	1	1
Ophthalmia Neonatorum	1	0	0	1

We have been requested by the Director-General of Public Health of New South Wales to publish the following notice:—

Unsuitable Containers for the Transmission of Sputa for Microbiological Examination.

Screw-top bottles are frequently used for the transmission of sputum, probably on account of their wide mouths. These almost invariably leak, soil the wrappings, and sometimes soak right through the package.

The Department of Public Health desires to state that in future under no circumstances whatsoever will its officers examine specimens of sputum or other dangerous material if submitted in unsuitable containers, such as screw-top or insecurely corked bottles, match-boxes, fragile test tubes, tobacco tins, handkerchiefs, etc.

Post Office Regulation 46, a copy of which is attached, requires that such materials shall only be forwarded in suitable containers, securely packed against breakage. Failure to use suitable receptacles, whether the specimens are transmitted by post or by hand, may lead to grave danger to the persons handling them, whilst these precautions will indicate to patients the care that must be taken to prevent infective sputum, etc., from being dangerous to other persons, and thus should have beneficial educative results.

The difficulties which the Department of Public Health has found in this matter, will no doubt have been experienced by those in charge of other licensed laboratories.

Postal Regulation No. 46.—Pathological specimens addressed to laboratories registered by the Postmaster-General may be accepted for transmission by registered packet post, under the following conditions, viz.:—

- On the outside of every such packet there must be written or printed the words "Specimen for Bacteriological Examination."
- The liquid or substance forwarded for examination must be enclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden or metal case, in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton wool) so packed about the receptacle as absolutely to prevent any possible leakage from the packet in the event of damage to the receptacle.
- The packet must on no account be dropped into a letter-box or be sent by parcel post. Any packet of the kind found in the parcel post, or any packet of the kind, whether registered or not, found in the post, not packed as directed, shall be deemed to be posted in contravention of the *Post and Telegraph Act, 1901-1913*, and dealt with accordingly.

Any person who sends by post pathological specimens, otherwise than as provided by these Regulations, shall be liable to a penalty not exceeding Fifty pounds.

A packet containing any pathological specimens shall not be accepted for transmission, or, if found in the post, shall not be delivered unless addressed to a laboratory which has been registered by the Postmaster-General in accordance with this Regulation.

We have been requested to announce that Dr. W. Kent Hughes has resumed his practice at No. 22 Collins Street, Melbourne.

During the absence on active service of Dr. J. F. Agnew (B.M.A.), Dr. A. H. M. Maxwell (B.M.A.) has been appointed Acting Officer of Health for the city of Collingwood, Victoria.

Abstracts from Current Medical Literature.

MEDICINE.

(133) Persistent Tachycardia.

C. E. Lea records a case of persistent tachycardia (*Practitioner*, February, 1918). The patient, aged 51, had been well and following laborious work, till December, 1916. Then cough began, with tightness of the chest and difficult breathing. Work had to be given up. He had attacks of palpitation. No rheumatic history. On examination, the heart showed nothing of note. There was neither oedema, albuminuria, nor sign of thyroid disturbance. The pulse was regular and fast—144 per minute. It was unusually steady in its rate. It remained exactly the same whether the man stood up, sat or lay down; whether he held his breath or breathed forcibly. This character of the heart rhythm is diagnostic of abnormal impulse formation in the heart. Some focus in the muscle is more irritable than the rest, more excitable than the sinus, and therefore sets the heart off at a rate controlled only by the rhythmic power of such focus. The heart does not respond to influences acting through the sinus. The patient walked vigorously round the room. The pulse fell to 106, and became irregular. This rarely occurs in paroxysmal tachycardia. It is a common event in auricular flutter, and indicates a temporary disturbance of conductivity in which two, three or four successive auricular beats fail to actuate the ventricle, with a consequent slowing and arrhythmia. Digitalis, in such conditions, may convert flutter into fibrillation. If the digitalis is then withheld, the heart may revert to its sound rhythm, not to flutter. The patient was put on digitalis. In a week the pulse was still 148 and regular. The dose was doubled. After two doses the pulse was 112 and after the third 72. The patient became alarmed, and stopped taking the medicine. Soon after he felt better and resumed work, having been on full duty for six months. He looked well, and had no symptoms for six months.

(134) Anthrax with Multiple Lesions.

W. T. G. Davidson describes the case of a man who, four days after slaughtering an animal suffering from anthrax, developed a pimple on the back of his left hand (*Lancet*, January 19, 1918). Three days later another appeared on the right forearm. On the following day he attended hospital, where anthrax was diagnosed. A well-developed malignant pustule was seen on the back of the left hand, with much inflammatory oedema. Half way up the forearm was a similar but smaller lesion, with very little oedema. The patient received Slavov's serum, and both pustules were excised. Next morning a papule appeared half way up the left forearm; this also was excised. *B. anthracis* was obtained from the first two pustules. The third one was, unfortunately, destroyed without bacteriological examination, but was undoubtedly

malignant pustule. The three lesions were at different stages of development, and the possibility of direct infection with the bacillus at the same time is precluded, as the incubation period is from one to three days after infection. It was very unlikely that the patient auto-inoculated himself at different times by scratching the first lesion and transferring the infection to the other places. When the first pimple appeared he dressed it with a lysol dressing and did not rub or scratch the part. He wore the clothing he had on for seven days afterwards. It is probable that spores remained on the shirt until, after gaining entrance through the epidermis by minute abrasions, the spores developed rapidly into bacillary form, and produced a second and third lesion. The patient made an uneventful recovery, without pyrexia or constitutional symptoms.

(135) Treatment of Pneumonia.

F. C. Shattuck and C. H. Lawrence state that in 4,000 odd cases of lobar pneumonia treated in Massachusetts Hospital from 1822 to 1917, the mortality has increased from 10% in the first decade to 28% at the present time (*Boston Med. and Surg. Journ.*, February 21, 1918). Since 1881 there has been no significant change in the death-rate. The number of cases classed as delicate or intemperate has been decreasing. The apparent increase in complicated cases is probably due to increased accuracy of diagnosis and recording. The relative number of foreign-born patients is increasing, while the mortality among them is diminishing. The death-rate among American-born patients has increased slightly, as has the mortality among men as compared with women. This may be due to a corresponding increase in vascular diseases during the period studied. Treatment has done nothing towards diminishing the mortality from pneumonia during the past ninety-five years. Bleeding, purging, fresh air—the result has been the same. The habitual use during health of alcohol in more than moderate amounts diminishes the patient's chance of recovery. The mortality-rate among those patients who were given large amounts of alcohol during their illness, is no higher than among those given no alcohol and large amounts of fresh air. The figures do not indicate that alcohol is harmful to those sick with pneumonia. The effect of this drug varies with the conditions under which it is given; it is not poisonous to those who have high temperatures and are taking insufficient nourishment. No change is to be expected in the results of treatment until a specific is discovered which will neutralize the toxins of the pneumococcus. The results of the serum now in use are encouraging, but limited, and, until its use becomes accepted, the treatment must be that best suited to the individual. No routine treatment has been justified by its results.

(136) Adrenal Glands and the Circulation.

R. G. Hoskins publishes the results of experiments made with C. W. Mc-

Clure (*Endocrinology*, July-September, 1917). If adrenin be injected into a vein at a small but gradually increasing rate, at first no effect is seen. Then changes occur, one of the earliest being depression of intestinal peristalsis, before any rise of blood pressure occurs. Adrenal extirpation is fatal and the final symptoms include a failure of functions that are under sympathetic control. It was found that at a time when an animal deprived of its suprarenals was showing marked evidence of the fact, its vaso-motor system responded well to stimulation. Vaso-motor failure is a secondary feature; cardiac and muscular weakness precede it. In an animal deprived of its adrenals, it was noted that infusions of dilute adrenin often seriously impeded the reaction of the vasomotor system to stimulation. In some cases pronounced block was demonstrated, thus disposed of the theory that circulating adrenin facilitates vasomotor functioning. Possibly minute quantities are necessary for the metabolism of other tissues, e.g., brain cells. Adrenin deficiency plays no essential part in the Addison syndrome. Adrenin is merely a reserve for emergencies. Adrenin, in a general sense, is neither a vaso-constrictor nor a vaso-dilator. It is one or the other, depending on what vessels are involved. In some cases, as in the lungs, the effect depends on the dosage; diametrically opposite results being obtained with change of the quantity. Neither can one generalize to the effect that the splanchnic vessels are constricted while the peripheral vessels are dilated. In the peripheral circulation are included not only the skin, but also other less extensive structures that respond by constriction. The effect in a limb is a composite one; the limb as a whole either contracting or expanding, depending on whether vaso-dilatation in the muscle or vaso-constriction in the skin predominates. The fact that muscular tissues form the predominant mass in the trunk and limbs would seem to account for the fact that adrenin passed through the extra-splanchnic circulation, causes a fall in arterial pressure.

NEUROLOGY.

(137) Torsion Spasm.

Ramsay Hunt (*Journ. Amer. Med. Assoc.*, November, 1916) described the progressive torsion spasm of childhood (*dystonia musculorum deformans*), discussed its nature and symptoms, and reported six personally-observed cases. The disease, first described by Ziehn, is confined to the descendants of Russian and Polish Jews. It is a progressive torsion spasm of the trunk and extremities, often associated with hypotonia and sometimes with movements of a more clonic or rhythmic nature, suggesting chorea or athetosis. Occasionally there is tremor. The twisting and tractile quality of the spasm, the attendant distortion of the trunk and extremities, and the bizarre disturbances of posture, gait and station are

characteristic. Hysterical stigmata and the mental features of tic are wanting. Sensibility is intact, and there is no sign of pyramidal tract affection. It is a progressive disease, with a limited symptomatology, might eventually become stationary, and is incurable. Hunt agreed with earlier observers, who regarded it as an organic affection of the nervous system.

(138) The Pathology of Epilepsy.

Bolten (*Rev. Neurol.*, July, 1917) thought that idiopathic or essential epilepsy and Jacksonian or traumatic or cerebral epilepsy, in the majority of cases could not be differentiated. Jacksonian epilepsy might arise from an affection of meninges, cortex or deeper parts, and the lesion might induce increased intracranial pressure, or local clearization, or circulatory disturbance. Idiopathic epilepsy was a chronic auto-intoxication by products of alimentary decomposition and by toxins arising from defective cell-metabolism, which, in consequence of hypofunction of the thyroid and parathyroid glands were imperfectly neutralized. In idiopathic epilepsy the toxins were derived from the general bodily metabolism; in Jacksonian epilepsy, on the contrary, they issued from the cortex itself, in which, following circulatory disorder, there was local venous and lymphatic stagnation and accumulation of noxious products. In both forms of epilepsy the convulsion was to be taken as an effort on the part of the organism to relieve itself of toxins. The blood relieved itself through the kidneys, lungs and skin; the cerebral cortex drained into the blood. In idiopathic epilepsy a true anti-epileptic treatment (the rectal administration of fresh extract of thyroid and parathyroid glands) sufficed to dissipate all morbid phenomena. In Jacksonian epilepsy operation alone could afford relief.

(139) Mental Symptoms in Disseminated Sclerosis.

Maxwell Ross (*Rev. of Neurol. and Psych.*, Vol. XIII., No. 8) described the mental symptoms in five cases of disseminated sclerosis occurring among 750 patients in the Royal Edinburgh Mental Hospital. The forms of insanity presented by these cases at different periods of their illness vary, but if the symptoms and those described by other writers in similar cases be summarized, two will be found characteristic of the nervous condition. These are an enfeeblement of the intellect as a whole, which is usually slight in degree and very slowly progressive; and a disturbance of the emotions, consisting most frequently of a more or less pronounced euphoria, or sense of well-being, less commonly of depression or of instability, all being associated with considerable variability in the moods. In addition, there may be found, not uncommonly, fleeting delusions, impairment of memory and acute delirious episodes, with occasionally a tendency to paranoia. The writer concluded that mental symptoms, when present in disseminated sclerosis, were

sufficiently characteristic to be of assistance to the physician in making a clinical diagnosis.

(140) Conjugal Tabes Dorsalis.

Conjugal tabes is rare, therefore Throckmorton published this example (*Journ. Nerv. and Ment. Dis.*, October, 1917). The husband was 66 years of age. For 16 years he had complained of urinary incontinence, vague pains in the limbs and locomotory unsteadiness. He admitted Neisserian, but denied luetic infection. On examination, he showed ataxia of arms and legs, Argyll-Robertson pupils, hyperæsthesia of the chest, hypæsthesia of the legs, loss of knee-jerks, urinary incontinence and perforating ulcer of the foot. He died, and the changes distinctive of tabes were found in his spinal cord. The wife's condition was as typical as that of the husband. She had had nine miscarriages and one still-birth. When 51 years old she began to suffer from rheumatoid pains in the legs, unsteadiness of gait and transient diplopia. Later vesical and rectal weakness, a girdle sensation and ulnar paresthesia appeared. On examination, there was ataxia of the lower extremities, Rombergism, the Argyll-Robertson pupil and absence of knee-jerks. The blood of the husband gave a slightly positive Bordet reaction, that of the wife was negative.

(141) Tetanus.

Lumière (*Annales de l'Institut Pasteur*, 1917) related some observations on tetanus arising among wounded soldiers already treated by prophylactic injections of antitetanic serum. His conclusions were: (1) Preventive injections of antitetanic serum were not completely prophylactic in all cases. (2) It was impossible to specify the degree of immunity, since it depended on the relative amounts of toxin and antiserum in the patient at a given time. (3) Tetanus arising after injection of serum appeared to be caused by one of two things; an excessive amount of toxin in the vicinity of the wound and out of proportion to the quantity of serum introduced, or the liberation of spores, previously latent, by a surgical operation or another trauma after the activity of the injected serum had declined. Such tetanus was late in appearing. (4) An imperfectly purified wound might explain a failure to prevent tetanus. (5) A second dose of serum had been followed by benefit. (6) The clinical symptoms were modified by the initial serum, and in many cases no nervous symptoms arose, making the prognosis favourable. Injections of sodium sulphate had been found by the author preferable to morphine and chloral hydrate for the relief of muscular spasm.

(142) Arseno-Benzol in Tabes.

Lépine (*Bull. Acad. Méd.*, 1917) issued a warning against placing too much reliance on the all-round spirochaeticidal efficiency of arseno-benzol. He was of the opinion that the intensive mercurial treatment of syphilis practised before the days of salvarsan and its allies

had brought about a reduction both in the severity and in the frequency of *tabes dorsalis*, and he stated that, since the use of salvarsan had become general and mercury had been more or less dropped, he had observed not only more cases of *tabes dorsalis*, but more severe cases. Further, he had noticed that the interval between luetic infection and the onset of tabetic symptoms was shorter. The lesson was obvious. Incidentally, he mentioned that in his war experience he had seen cases of "shell shock" (cerebral concussion) simulating general paralysis of the insane, and some physicians had been so ill-advised as to administer arseno-benzol in such cases.

(143) The Treatment of Writer's Cramp.

Graham, President of the Massachusetts Massage Association (*Edinburgh Med. Journ.*, October, 1917) deplored that writer's cramp and allied conditions were regarded by most physicians as incurable. To show that this was incorrect he quoted cases of his own, and referred to the 277 cases reported between 1877 and 1882 by Wolff, of Frankfort. Graham recommended that re-education in writing be enforced, because the fine, complex movements of writing, in being the last acquired, were the soonest lost. Such re-education was begun by teaching the patient to make parallel lines from left to right and sometimes from right to left. This was a preparation for freehand writing, for training the upper and forearm to co-operate with the hand. At the same time, skilfully-applied, deep and searching, but gentle massage of the fingers, hand, forearm, upper arm and also the upper part of the back was to be carried out daily for a time, and later every other day; and in association with this resisted movements of supination of the forearm, and of extension of the wrist and of each finger separately were to be practised.

(144) The Mechanism of Hysterical Phenomena.

Salmon (*Rev. Neurol.*, July, 1917) thought hysteria might be due to a disturbance of the coenesthetic sense (the collective, undefined sensations of the body). This sense dominated the mechanism of all voluntary and automatic actions, to which the mechanism of hysterical actions was subservient. The fundamental postulate in the production of hysteria was a hyperæsthesia of the coenesthetic centres, leading to a disequilibrium of this sense, and, in consequence, to modifications of personality. The relation between the coenesthetic sense and the emotions was also of importance. The coenesthetic images would constitute the intermediate element between the emotional and the hysterical action, and would explain the readiness with which hysterical troubles, created either by emotional or affective ideas, repeated themselves. Further, vaso-motor, secretory and other quasi-organic disorders met with in hysteria could only be explained on this hypothesis.

British Medical Association News.

SCIENTIFIC.

A meeting of the South Australian Branch was held at the House of the Branch, Hindmarsh Square, Adelaide, on February 28, 1918, Dr. J. C. Verco, the President, in the chair.

Dr. G. R. West gave the details of a case of extra-uterine hydatiform mole. The patient was an unmarried woman, aged 19 years, who was admitted to the Adelaide Hospital on December 7, 1917, with a history of three months' amenorrhœa. It was ascertained that an abortionist had passed an instrument on November 2 and 29 and December 1, and that this had been followed by slight bleeding. On December 4 severe abdominal pain set in, and was accompanied by a blood-stained vaginal discharge.

On enquiry it was ascertained that the patient had been confined 15 months before and that there had been a complete perineal rupture, which had been repaired after a lapse of three months.

On admission the pulse-rate was 120, the respiration rate was 28 and the temperature 38.1° C. The patient appeared to be in severe abdominal pain. A large tender mass was felt, reaching nearly to the umbilicus and inclining to the right side. On vaginal examination the mass was felt to be continuous with the uterus. The patient was anesthetized with ether, the cervix was dilated and a sound was passed. It penetrated to the left for 10 centimetres. The uterus was curetted, but no chorion was removed. The posterior fornix was then opened and a puncture into the mass was followed by a profuse flow of bright blood. The colpotomy opening was immediately packed and the abdomen opened in the middle line. The abdomen was found to contain fresh as well as old blood and a few free vesicles. There were some adhesions associated with the mass. These were broken down and some free hæmorrhage was caused. The mass occupied the right side of the pelvis, was continuous with the uterus, and extended in the infundibulo-pelvic fold into the iliac region. The fold was clamped and divided and the uterus and mass were removed in one piece, the left adnexa being retained.

The patient was considerably collapsed after the operation, but eventually recovered after a stormy convalescence with a vesical vaginal fistula. There was no sign of recurrence up to the time of reporting to be felt in the abdomen. Dr. West pointed out, however, that the removal was probably not complete at the right extremity of the mass. The mass had been examined pathologically and proved to be a tubal pregnancy, which had developed into a hydatidiform mole. The hardened specimen measured approximately 14 centimetres by 6 centimetres. The mole had invaded and destroyed the wall of the tube, and had invaded the uterine wall, particularly at the fundus. The mass was growing in the broad ligament and was covered by peritoneum. The ovary was included in it, and an adventitious capsule had developed and confined it, except where it invaded the uterine wall. The mole was of the destructive variety, but there was no microscopical evidence of a chorion epithelioma.

Dr. R. E. Harold exhibited a case of *mycosis fungoides*. Dr. I. E. Ashby showed a case of syndactylism and one of *melaena neonatorum*, and Dr. A. Campbell Magarey showed a case of congenital dislocation of the hip and also a case of tubercular peritonitis.

The President referred with gratification to the news that Drs. Strangman and Flood, who had been on board the *Matunga* when she disappeared, were now safe in England.

Dr. J. C. Verco read a paper on *mycosis fungoides*. Dr. Lionel B. Bull contributed some pathological notes on the condition (see page 319).

MEDICO-POLITICAL.

A Committee appointed by the Council of the South Australian Branch to consider the proposal to introduce a midwives bill and to institute prenatal clinics in the State received the following letter, dated November 29, 1917, from the Secretary of the School for Mothers' Institute:—

My Committee feel very strongly that in the interest of mothers and babies, lying-in homes should not be

licensed, unless they are under the management of a fully trained and certificated midwife; also that the midwives attending the women in their own homes should be properly trained and certificated women. I have been instructed to write and ask to place the matter before your Association and to discuss the advisability of requesting the Government to draft a midwives Act somewhat on the lines of the Victorian Midwives Act, 1915.

The Committee also wish to know what the opinion of the British Medical Association is regarding the supervision of the expectant mother.

The School for Mothers has not taken up this work very actively, but an increasing number of expectant mothers are coming to the school, on their own initiative. Since March, 56 of these mothers have come for advice. The nurses give advice regarding feeding, clothing and general care of their health. Several have been advised to see their doctor, as the nurse thought they needed medical attention. What action would your Association suggest when a woman has no doctor, and says that she cannot afford one, also that she cannot leave her home and children to go to the Out-patients' Department at the Hospital? Some of these mothers have very bad teeth and cannot afford to have them seen to; can you also suggest what can be done for them?

It is the desire of my Committee that the nurses should work in with the medical profession, therefore any suggestions regarding the care of the expectant mother will be gratefully received.

The Committee considered this letter and a memorandum accompanying it on March 6, 1918, and has now issued its report. In the memorandum it was pointed out that pre-maternity clinics could be used for the investigations and treatment of abnormal conditions of pregnancy women. The School for Mothers' Institute suggested that a clinic of this kind should be conducted in the Out-patients' Department of the Adelaide Hospital on afternoons when the room would be free. They also suggest that the Queen's Home, a well-equipped maternity hospital, should be utilized for the prenatal treatment. Nurses from the School for Mothers and from the District Trained Nurses' Society could visit expectant mothers, and when necessary refer the patients to their own doctors or to the clinic. Medical practitioners could send patients to the clinic for expert advice in special cases. The Committee of the School for Mothers' Institute hold the opinion that nurses should be allowed to test the urine for albumin and sugar and to report when either are discovered. The scheme put forward appeared to the Committee to possess great advantages in that it was simple and inexpensive and that it utilized and consolidated existing agencies. The same Committee also expressed the view that a Midwives Act was greatly needed. They considered that the practice obtaining was quite anomalous. The Board of Health issued licenses when the sanitary condition of the house was satisfactory, while a home could be conducted by a woman without any qualifications.

The following is the report of the Committee of the South Australian Branch Council:—

A.—The Committee is of the opinion that:—

- (i.) All lying-in homes should be licensed and regularly inspected and should be in charge of certificated midwives.
- (ii.) It is also advisable that midwives attending women in their own homes should be properly trained and certificated, provided this does not apply to persons in charge of homes already licensed prior to this regulation coming into force.
- (iii.) The Committee recommends that the Government be again approached in an endeavour to get a satisfactory midwives bill passed through Parliament.

B.—(i) The Committee recommends that the Government be approached through the Board of Management, with a view to establishing a prenatal clinic in connexion with the Adelaide Hospital Out-patients' Department on some suitable afternoon each week, when such department is not otherwise in use.

- (ii.) It is expected that if this be established, patients recommended by medical practitioners and such in-

stitutions as The Queen's Home, The School for Mothers and the District Trained Nurses' Society, will avail themselves of and benefit by this new departure.

- (iii.) Moreover, they will have the advantage of all the facilities of investigation and treatment attaching to a general hospital.
- (iv.) And the Committee considers that the natural expansion in time of this scheme will cover the other points raised in the letter submitted as regards the expectant mother.

THE CARE OF THE INSANE IN NEW SOUTH WALES.

In the course of a report covering 17 pages of foolscap, Dr. Eric Sinclair, the Inspector-General of the Insane for New South Wales, gives a mass of highly important and suggestive details concerning the work in his Department during the year 1916. The public is apparently uneasy when it learns of the extent of mental disease in a given community, and we fear that the medical officers responsible for the conduct of the institutions where persons of unsound mind are cared for and treated, unconsciously pander to this uneasiness by attempting the impossible task of explaining variations in the incidence of insanity.

When it is considered that general paralysis of the insane and a few other mental affections are consequent on an inefficiently treated syphilitic infection in a person with a vulnerable central nervous system, it will be recognized that variations in the incidence of this form of mental affection are dependent on many complex but more or less ascertainable precursory conditions. The relative rarity, however, of general paralysis of the insane renders this aspect of the aetiology an exceptional one. In regard to the vast majority of diseases of the mind, we have to admit a deplorable amount of ignorance, and to assume that the factors determining an increase or diminution in frequency are so widespread and diverse that no generalization becomes possible.

Dr. Sinclair announces that the number of patients admitted to the mental hospitals during the year constituted a record, and also that the number of patients on the register was greater than in previous years. He calls attention to the fact that there is a fallacy underlying the calculation of the frequency of insanity on the basis of the proportion of persons admitted to the mental hospitals to the population, inasmuch as the members of the Australian Imperial Force serving overseas were excluded from the estimate of the general population. In 1915, one person in every 263 of the community had been certified as insane, while in 1916 the proportion was one in 254.

During the course of the year 1916, 1,224 persons were admitted to the mental hospitals for the first time and 202 were readmitted during the year. The number of persons transferred from one hospital to another was 368. In addition to these figures, the number of patients in the hospitals on the last day of the previous year is given as 7,063. It thus appears that, while treatment was accorded in 8,857 cases, the total number of patients treated was 8,833. The number of patients who died was 610. The number of patients who were discharged or who escaped was 639, and, consequently, at the end of the year there were 7,240 still under control. The table giving these data is complicated by the fact that the term re-admission is applied to patients who have been in the Hospital on a previous occasion, both in former years and during the course of the year under review.

In dealing with the number of patients on the registers, it appears that the annual increase during the past 20 years was 152.25. The annual increase for 1916 was 138. The increase was below 100 in five years and above 200 in six. Of the 7,284 persons on the registers, 6,699 were in mental hospitals, 88 were in licensed houses, 453 were on leave under the provisions of the *Lunacy Act*, and 44 were in the Parkside Mental Hospital in South Australia.

The proportion of admissions, including re-admissions, to the general population has varied during the past 20 years between one in 1,295, in 1916, and one in 1,912, in 1897. As already mentioned, the figures for 1916 are not actually comparable with the figures in pre-war years. It appears from the table that during the ten years from 1897 to 1906 there was a steady rate of increase in the "occurring insanity."

From 1907 and 1908 there was apparently a marked drop in the frequency, while from 1909 till the beginning of the war the rate again approximated that obtaining in 1902 to 1906. It is, of course, possible that the lower frequency recorded in the 'nineties and the drop which occurred in 1907 and 1908 may have been artificial and not real, and owing to a disinclination on the part of the public or of the profession to place persons suffering from the less dangerous forms of insanity, under control.

During the course of the year 545 persons recovered. By this is meant that these individuals were discharged from the hospitals free from symptoms of mental disease. Apparently one patient recovered twice during the year. The recovery followed in 337 instances when the patients had been not more than 12 months in the hospitals, and in 453 instances when the patients had been in the hospitals for not more than two years. That the recoveries were not cures is shown by the information contained in the table dealing with the form of mental disorder. It appears that four persons suffering from general paralysis of the insane, seven from organic lesions producing dementia and seven from congenital or infantile mental deficiency, recovered. The patients who recovered included 144 who were suffering from delusional mania, 95 who were suffering from delusional melancholia, 69 who were suffering from acute mania, 44 who were suffering from acute melancholia, 53 who were suffering from alcoholic mania, 25 who were suffering from recurrent mania and 23 who were suffering from primary dementia. During the course of the year, 31 women were admitted on account of puerperal insanity. The number of recoveries was 14. These data detract somewhat from the significance of the recovery rate. We have commented in another connexion on the practice of calculating recovery rates as the percentage of the persons discharged temporarily without symptoms of the total number of persons admitted and re-admitted during the year. It would, in our opinion, be more logical if this universal practice were abandoned in favour of a statement of the actual fate of the persons under control. In order to achieve this end, it would be necessary to fix a time arbitrarily of freedom from symptoms, before recovery could be assumed. It would then be possible to deal each year with a group of patients whose mental disease could be regarded as terminated. It appears that there were 74 patients who died during the course of the year after a residence in the hospitals of over 15 years. The curability of the various forms of mental disease could be calculated if accurate returns were published over a course of 25 or 30 years. We venture to suggest that if the fate of the 7,284 individuals now on the registers were determined between 1916 and 1941 it would transpire that very considerably less than 38.28%, the recovery rate given for the year, had actually recovered. Dr. Sinclair makes the full use of the standard method of recording the frequency of recovery by comparing the rate with that of previous years. Apparently, the rate for 1916 was 1.24% below the average for the last ten years.

During the course of the year 886 persons were granted leave and, in addition, there were 406 who were still on leave at the beginning of the year. In these cases the friends are required to undertake the care and responsibility of the patients. Of the 1,292 patients, 356 received their discharge while on leave. Ten died while on leave and 473 were returned to the hospitals.

Dr. Sinclair gives some information concerning the transference of patients from one hospital to another.

In two tables are set out the causes of the mental disease in the persons admitted during the year and the causes of death in those who died. In a third table the form of mental disorder of all the patients is set out. In regard to the causes of insanity, we applaud Dr. Sinclair's frankness in having entered "unknown" against 395 patients. Intemperance and drink appears to have been by far the most common actual cause of disease. It is difficult to accept old age as a cause of insanity, while the existence of congenital defects should be regarded rather as an effect than as a cause. Heredity comes next in frequency and is followed by "other bodily diseases and disorders and chronic ill-health." Venereal disease is supposed to have acted as a predisposing cause in 11 cases and as an exciting cause in 57.

The form of mental disease does not differ from that recorded year by year in mental hospitals throughout the world. As usual, delusional mania is the most common, and

delusional melancholia is second. Congenital mental deficiency is relatively more common among those remaining in the hospitals than in those admitted, discharged or dead.

A consideration of the tables setting out the various causes of death acting during the year reveals that in 254 cases out of a total of 610, the immediate cause of death was localized in the central nervous system. The patients died of their mental disease in 216 cases. This includes 85 deaths due to general paralysis of the insane, 68 to inflammatory and other diseases of the brain, 32 to maniacal and melancholic exhaustion and decay and 31 to epilepsy and convulsions. In 36 cases the death was due to the secondary effects of apoplexy and paralysis, and in one to the secondary effects of fracture of the skull. There was one death due to tabes. A certain number of patients naturally share the fate of the general community, save that the wear and tear of free life would appear to invoke a greater tendency to malignant disease. Excluding those who died of insanity, there were 356. To these should be added the 36 deaths due to apoplexy, inasmuch as cerebral hemorrhage is a vascular disease and not a mental process. Of these 382 persons, 79 died of diseases of the heart and blood vessels and 36 of apoplexy, making a total of 115, or 30.1% of the total number of deaths. The number of deaths from pulmonary tuberculosis was 68, while that from carcinoma was only 7, and from sarcoma one. Pneumonia, pleurisy and bronchitis, grouped together, was made responsible for 57 deaths, while dysentery and diarrhoea caused eight deaths, diphtheria one, acute rheumatism one and tubercular arthritis one. There were three deaths from pernicious anæmia, which is now regarded as an infective process. Inflammatory and ulcerative conditions of the stomach, intestines and peritoneum caused 40 deaths and albuminuria (surely this should be chronic Bright's disease) caused 24. Thirty-nine of the patients died of general debility and old age. There were five deaths from suicide and three from accident, which is certainly not a large number in a community of close on 7,000 persons.

During the year no less than 59 patients took French leave. The escapees were immediately followed and 56 of them were brought back to the mental hospitals. Dr. Sinclair points out that the necessary precautions to safeguard dangerous patients are not so relaxed as to permit of their evading the vigilance of the nursing staff. A considerable amount of liberty is granted to the harmless patient as part of his treatment, and to this fact the relatively high proportion of escapes is attributable. He consoles himself and reassures the public by an assurance that none of the nine who made good their escape were of a dangerous class. One patient who escaped was run over by a train and another was found drowned in the Hawkesbury River. Both these deaths were returned as accidental. Three patients committed suicide, one by hanging, one by drinking a poisonous preparation which was being used by the gardener, and one by inserting a clothes' peg into her mouth.

Dr. Sinclair complains bitterly of the want of accommodation in the hospitals under his care. The hospitals have been constructed to harbour 5,970 patients, whereas 6,699 had to be taken in.

In connexion with the Reception House at Darlinghurst is a Mental Ward for the reception of patients with incipient mental diseases or those who are amenable to treatment without the expedient of enforced detention. In the Reception House patients can be detained by compulsion. Full use has been made of both these Institutions for the treatment of mental affections of short duration. Patients are not certified as insane unless the anticipated recovery is delayed, in which case the process of certification is completed and they are sent on to one of the mental hospitals. In the Mental Ward the patients are allowed to stay as long as is necessary. This Ward is managed in precisely the same manner as the ward of a general hospital. Its primary establishment was undertaken with a view to the demonstration that a ward of this character could be attached to a general hospital without any difficulty. We have urged the responsible authorities to open psychiatric clinics in all teaching hospitals, both in the interests of the patients and because they provide facilities for a wider teaching of psychiatry and for a more extensive application of scientific investigation. The general hospitals of Sydney, however, have not yet adopted this suggestion, and consequently the Mental Ward at Darlinghurst is the only available psychiatric clinic in the city. During

the course of the year 123 persons sought admission to the medical wards, in addition to the 16 who were under treatment at the beginning of the year. Of these 138 patients, one died and 118 were well enough to be discharged, while 19 had not recovered sufficiently at the end of the year to justify a breaking off of the treatment. In view of the success attending this voluntary method of receiving persons with mental disorders, the system was introduced two or three years ago at the ordinary hospitals for the insane.

At the Reception House, Darlinghurst, the total number of admissions during the year was 1,444. There were 19 patients under observation at the beginning of the year. The discharge was effected either by certificate or from the Police Court, and, in the case of 577 patients, followed on ostensible recovery. A further 16 patients were discharged "relieved." In the cases of 833 patients, the permanence of the symptoms justified transference to the mental hospitals or licensed houses. Nine persons died during the year. At Newcastle 113 persons were admitted to the Reception House and two were under observation at the beginning of the year. In 45 cases the patient was discharged, recovered, from the Police Court, and six were discharged, relieved. One patient died and 62 were transferred to other hospitals.

The Hospital for the Criminal Insane is attached to the Mental Hospital at Parramatta, but is kept separate from the latter. On the last day of the year there were 50 inmates under control. Twenty-seven of these had been convicted of murder, attempted murder, or manslaughter; six of assaults on individuals, three of sexual offences, 12 of offences against property, one of false pretences and one of inebriety.

In the State Penitentiary at Long Bay there is an Observation Ward where prisoners from the various gaols, persons awaiting trial, persons acquitted on the ground of insanity and awaiting the Governor's pleasure, and persons under sentence or on remand from the Police Courts are subjected to expert observation. The total number of persons under observation was 64. Of these, eight were found to be of sound mind, 16 were referred to mental hospitals, 17 were discharged to the Police Courts, 16 were referred to the Reception House and seven were still under observation at the end of the year.

Dr. Sinclair inserts short paragraphs dealing with the patients at Broken Hill who are admitted, by arrangement, to the hospitals for the insane in South Australia, and with the subject of inebriates. Some provision is made for the reception of inebriates on a voluntary basis at an institution at Shaftesbury. There is also a private institution conducted by the Salvation Army. The information given in the report is of a meagre character.

The remainder of the report is comprised of mention of some changes in the staff and of a proposed amendment of the Lunacy Act and a detailed statement of the cost of maintenance, the total expenditure and other financial matters.

Obituary.

JAMES BUICK.

The war has been the indirect cause of the death of James Buick. Having retired from active practice on account of ill-health some years before war broke out, he felt himself impelled to offer his services to the military authority in the No. 1 Military District, and after many months of strenuous and responsible work his strength gave way. He died at Bendigo on February 27, 1918.

James Buick was born in London in 1859. He studied medicine in Glasgow, where he graduated in the year 1892. He spent some time on the Continent, and visited Vienna, where he studied under Virchow and other celebrated professors of the Viennese school. He came to Australia in 1879, and was appointed Junior Medical Officer at the Bendigo Hospital. In the course of time he occupied the position of Senior Medical Officer. He then returned to England and Ireland, and while in Dublin attended a post-graduate course in gynaecology and obstetrics at the Rotunda Hospital. In the last year of last century he returned to Vic-

toria, and started practice at Richmond, where he remained until 1908. His great kindness endeared him to all with whom he was associated, and his patients felt it a genuine loss when ill-health compelled him to relinquish his practice in 1908. He travelled for some years, and in 1914 his health was sufficiently restored to enable him to offer his services for military duty at home. He was appointed Medical Officer in charge of the Enoggera Camp, where he was responsible for the continued good health of upwards of 8,000 men. He was given the rank of Major. After five and a half months' service he was transferred to other camps, both in Queensland and in Victoria. When he relinquished his military duties it was the beginning of the end.

Hospitals.

THE ADELAIDE CHILDREN'S HOSPITAL.

The Annual Report of the Adelaide Children's Hospital for the year ending December 30, 1917, was presented to the subscribers early in November, and has now been published in book form, together with lists of contributions, the rules of the hospital, various charming illustrations of the institution and sundry other pertinent matter.

In the body of the report reference is made to the anxiety which the Board experienced during the year in regard to the medical and nursing staff. There has been difficulty in replacing both medical officers and nurses who have offered their services to the military authority. The Board records with pride the fact that two of the nurses trained at the Hospital had been awarded the Royal Red Cross. The Board has consistently endeavoured to make their little charge-lings happy during their stay in the institution. The surroundings are made as pleasant as possible, and the children are given toys, books and garments. The Board has received valuable assistance in this connexion from the Adelaide Children's Hospital Dorcas Society and from the Ladies' Flower Mission.

During the course of the year 1,168 patients were admitted. The number of those discharged was 1,010, including 792 who were discharged as cured. The number of patients who died was 157, and consequently the case mortality was 13.4%. The average number of cots occupied was 90. There were 219 cases of diphtheria without complications and 34 with. There were 33 deaths, which yields a case mortality of 13%. There were 127 cases of pneumonia, 79 of gastro-enteritis, 36 of meningitis, including 10 of epidemic cerebro-spinal fever, 10 of enteric fever, 24 of tuberculosis of the joints, 38 of abscesses and 20 of appendicitis. The total number of out-patients treated was 1,660.

The patients during convalescence are frequently sent to the Queen Victorian Convalescent Home at Mount Lofty. The Home is open from September to May. During the course of the year 67 children were admitted to the Home.

The bacteriological work has been conducted in the Elder Laboratory, where work for the medical profession outside the Hospital is also undertaken. In the X-ray Department a considerable amount of activity was displayed.

We regret to note that the expenditure exceeded the income by £1,169. The annual subscriptions, general subscriptions and other contributions from the charitable public aggregated £3,313, while maintenance subscriptions amounted to close on £300. Rent and interest and a contribution from the Institute of Hygiene brought the Hospital in a further £1,925. The Government contribution was only £1,500.

Vital Statistics.

TASMANIA.

The vital statistics covering the last quarter of the year 1917 have been published in monthly instalments by the Government Statistician. The following are the chief facts and figures contained in these reports.

During the quarter there were born in Hobart 304 infants and in Launceston 203. Of these 507 babies, 267 were males and 240 were females. The birth-rate, calculated as an annual rate per 1,000 of population, was 31.56 in Hobart, 33.04 in Launceston and 32.83 in the urban districts. The rates were considerably lower than those of the corresponding period in the previous five years.

In the rural districts there were 797 births, which corresponds to a birth-rate of 23.63. In the corresponding quarter of 1915 the birth-rate was 26.2, and in that of 1916 it was 25.81.

The total number of deaths in the urban districts was 206, 109 being of males and 97 of females. Of the 206 deaths, 121 took place in Hobart and 85 in Launceston. The death-rate, expressed as an annual death-rate, in Hobart was 12.21, in Launceston it was 13.83 and in the whole urban area was 12.83. There were 29 deaths of infants under one year of age, which yields an infantile mortality rate of 55.03 per 1,000 births.

In the rural districts there were 219 deaths, which corresponds to an annual death-rate of 6.44. The rate in the fourth quarter of 1915 was 7.2 and in the fourth quarter of 1916 was 6.68. No data concerning the infantile death-rate in the country districts are published.

From the tables dealing with the causes of death we learn that in the urban district there were 39 deaths due to diseases of the cardio-vascular system. There were 14 deaths from tuberculosis, six from diarrhoea and enteritis, four from enteric fever, seven from pneumonia, four from diphtheria and one each from morbilli and cerebro-spinal meningitis. There were 21 deaths from cancer, five from chronic bronchitis and three from Bright's disease.

Very little information is available concerning the causes of death in the country. There were 12 deaths from pulmonary tuberculosis and two from other forms of tuberculosis. There were two deaths from diphtheria and 18 from cancer.

Correspondence.

NASAL TREATMENT IN THYROTOXIC GOITRE.

Sir,—We are indebted to Dr. Sydney Pern for his communications on thyrotoxic goitre which have appeared in the *Journal* on different occasions. His experience, based on a number of cases, that Graves's disease is frequently due to septic foci in the nasal sinuses, faucial tonsils, and in and around the teeth, and that it can be cured by removal of the cause, is of much interest, and ought to awaken other observers to be on the watch for such an easily removable cause of a serious disease. What we may beg of him is more accuracy of language in describing his cases. In your issue of April 6, 1918, "The Toxic Element in Goitre," we find Case 15: "She had her turbinated bone removed, to allow of free drainage." Which turbinated bone? Middle or lower? Is the latter justifiable? Case 18: "The nose was operated on." What was the operation? Case 21: "Her septum was removed." Again, Case 22: "Her septum was removed." Some future historian of medicine in Australia may note that in the year 1918 we were in the habit of removing the nasal septum, and may speculate on the effect of this procedure on the physiognomy of the inhabitants. Submucous resection of the nasal septum for the correction of deformities of the same, causing nasal obstruction, is an efficient and conservative operation, but it does not consist in removal of the nasal septum.

Yours, etc.,

"RHINOLOGIST."

April 12, 1918.

CARREL-DAKIN SOLUTION.

Sir,—In Carrel and Dehelly's recent book on the Carrel-Dakin treatment, attention is drawn to the necessity of titrating the chloride of lime used for free chlorine.

In a specimen obtained from my local chemist, only 15% was present, instead of 30%, and a Carrel-Dakin solution made according to Daufresne's formula showed only 0.2%, instead of 0.5% hypochlorite of soda.

I then increased the amount of ingredients according to the table given in the above book, but even then found the amount of hypochlorite slightly deficient.

I then interviewed the head of one of our large chemical houses, who informed me that all Australian chloride of lime is imported in hundredweight drums, which are split up into 14 lb. jars and 1 lb. tins. From their analysis, a freshly-opened drum of chloride of lime gave an analysis of

28.9% chlorine, whereas a drum that had been opened for a fortnight only showed 18% chlorine.

If we ask our local chemist to make eusol or Carrel-Dakin solution, it is highly probable that the result will be about half its proper strength, and although I have had some gratifying results from even these weak solutions, it is certainly not employing the Carrel-Dakin method.

I drew the attention of the wholesale chemist to the suggestion made in Carrel's book that all chloride of lime should have marked on the label the percentage of available chlorine, and his firm in future has undertaken to do so—a plan that should be universal. This will allow the necessary calculation to be made, and a fairly accurate solution to be prepared.

One firm supplies a powder in an hermetically sealed ampoule and liquid chlorine in another; these are mixed in a litre of water in a closed Winchester quart. This seems to give a solution of about the necessary strength.

Yours, etc.,

W. ATKINSON WOOD.

Melbourne (undated).

Proceedings of the Australian Medical Boards.

QUEENSLAND.

The following have been registered, under the provisions of the *Medical Act, 1867*, as duly qualified medical practitioners:—

Aitken, Gilbert Elliot, Goodna, L.R.C.P. and S. Edin., L.F.P.S. Glasg., 1907.

Burton-Brown, Frederick H., Normanton, Ch.B., M.D., Univ. Oxford, 1902.

Kelmar, Erwin, Maryborough, M.B., Ch.B. Univ. Melb., 1917.

O'Reilly, Bertram Charles N., Crow's Nest, M.R.C.S. Eng., L.R.C.P. Lond., 1909.

Stang, Thomas, Ipswich, L.R.C.P. and S. Edin., L.F.P.S. Glasg., 1900.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes, etc., sought, etc., see "Advertiser," page xix.

Department of Public Health, N.S.W., Second Government Medical Officer.

Royal Alexandra Hospital for Children, Camperdown, Resident Medical Officer and temporary Honorary Relieving Medical Officer.

Hughenden District Hospital, Surgeon.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Medical Officers to the Selwyn Hospital, North Queensland. Brisbane United Friendly Society Institute. Cloncurry Hospital.

Branch.	APPOINTMENTS.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Belgrave, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

- Apr. 20.—Northern Suburbs Med. Assoc. (N.S.W.).
Apr. 23.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Apr. 24.—Vic. Branch, B.M.A., Council.
Apr. 24.—Western Suburbs Med. Assoc. (N.S.W.).
Apr. 26.—N.S.W. Branch, B.M.A.
May 1.—Vic. Branch, B.M.A.
May 3.—Q. Branch, B.M.A.
May 10.—N.S.W. Branch, B.M.A., Clinical.
May 14.—Tas. Branch, B.M.A., Council and Branch.
May 14.—N.S.W. Branch, B.M.A., Ethics Committee.
May 15.—W. Aus. Branch, B.M.A.
May 15.—W. Aust. Branch, B.M.A.
May 16.—Vic. Branch B.M.A. Council Election of Representatives on Representative Body.
May 16.—Vic. Branch, B.M.A., Council; election of Representative on Representative Body.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.